THIS WEEK'S NATIONAL PETROLEUM NEWS

The Recognized Authority on News, Markets and Technical Developments in the Oil Industry

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COMING MEETINGS

General Exposition

Texas Centennial Exposition, Dallas and Ft. Worth, June 6 to Nov. 29.

Oil Meetings

American Institute of Mining Metallurgical, Western Meeting, Mexico City, Mexico, Nov. 7 to 16.

National Automobile Show, Grand Central Palace, New York, N. Y., Nov. 11 to 18.

Virginia Oil Men's Association, semi-annual meeting, John Marshall Hotel, Richmond, Va., Nov. 19 and 20.

Mid-Continent Oil & Gas Association, Kansas-Oklahoma Division) annual meeting, Tulsa, Okla., Nov. 20.

Interstate Oil Compact Commission Meeting, State Capitol Bldg., Oklahoma City, Okla., Dec. 1.

Independent Petroleum Association of America, annual meeting, Biltmore Hotel, Oklahoma City, Okla., Nov. 30 and Dec. 1.

American Society of Mechanical Engineers, New York City, Nov. 30 to Dec. 4.

Twelfth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City, Nov. 30 to Dec. 4.

Mid-Continent Oil & Gas Association, (Texas Division) annual meeting, Houston, Texas, Dec. 4.

First International Consumers Petroleum Exposition, Convention Hall, Detroit, Mich., Dec. 5 to 13.

National Exposition of Chemical Industries, Grand Central Palace, New York City, Dec. 6 to 11.

Nebraska Petroleum Marketers, Hotel Paxton, Omaha, Nebr., Dec. 8, 9 and 10.

Mid-Continent Oil & Gas Associa-

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T. G. DELBRIDGE

T. G. Delbridge, head of the Atlantic Refining Co.'s research and development department, has to his credit more than 25 years of executive experience in the refining industry, a considerable portion of which time has been spent on the technical problems common to all companies engaged in this branch of the oil industry. He has exerted his leadership in the American Society for Testing Materials and as chairman of the oil industry's advisory board to the Federal Committee on Lubricants and Liquid Fuels.

NATIONAL PETROLEUM NEWS

VOLUME 28 NUMBER 46

Second Term Policies of Roosevelt Important to Oil Industry

By A. M. PETTY
N. P. N. Staff Writer

WASHINGTON, Nov. 7

THE Roosevelt avalanche crushed every crystal ball in Washington and our political seers have been too busy with alibis to fashion new ones.

Another week, and they will be at it again. President Roosevelt will be pictured as veering left or turning conservative; reams of pros and cons will be written.

When Roosevelt returns in Mid-December from his ocean trip, he will find a thousand and one charts prepared for the second voyage of the New Deal.

But no one — probably not even the President himself, knows which course he will take. His general objective may be known, but there are many routes.

Smiling, but with sober confidence rather than hilarious cockiness which some of the more cynical had expected, President Roosevelt received newspapermen Nov. 6 at the White House. He revealed that the size of his majority in the election had greatly exceeded his own expectations.

He brushed aside with a smile all questions as to his plans, hinting that perhaps he would not even think of appointments and legislation until

• • •

he returns from his month-long sea voyage, starting Nov. 17.

During the campaign Roosevelt firmly resisted all efforts to make him reveal his intentions regarding revival of the NIRA, AAA, Guffey Coal Law and other New Deal legislation knocked out by the Supreme Court.

Candidate Roosevelt made it clear, however, that he would pursue his broad objectives of minimum wages and maximum hours, conservation of natural resources, aid to farmers, prohibition of child labor, collective bargaining, improvement of banking and social legislation. Seldom did he give any inkling as to how he intended to achieve these ends.

The very size of his majority makes predicting precarious. With a strong opposition in Congress, Roosevelt might be disposed to start his program immediately, spurning all objections as partisan. But any objection for partisan purposes is futile now, so Roosevelt may be more disposed to consider objections on their merits.

Congress is the real unpredictable factor. A large majority for any party has always produced blocs. And never has there been such a Senate or House of Representatives of such lop-sided proportions, nor a majority with a complexion more mottled.

The overwhelming popular endorsement of Roosevelt probably will hold Congress in check — how long, remains to be seen.

AFTER awhile, some of the more radical elements may decide that the Roosevelt vote was not so much a personal endorsement as a basic swing to the left. They would be mistaken. But it might make them reckless enough to try and take the ball away from Roosevelt and carry it further than he wants.

The oil industry faces Roosevelt's second administration in a decidedly different position than in 1933.

Unless there is a decided change, the oil industry will give little encouragement to the chaos-mongers.

But the fact that there is no "chaos" to view with alarm in the industry will not stand in

the way of attempts at federal oil legislation.

The Connally "Hot" Oil Law expires June 16. By backstopping state conservation laws, this federal statute has aided the interstate compact to keep crude production fairly well in line with demand.

A large portion of the industry probably favors re-enactment of the Connally Law. This gives the Administration good trading material. Before the bill gets through Congress it may be festooned like a Christmas tree.

THERE is little doubt that the Supreme Court *as it now stands* would hold unconstitutional direct federal control of oil production. But that obstacle confronts many of Roosevelt's plans.

Whatever general solution he devises for this problem — voluntary agreements, co-operative state laws or a constitutional amendment — may open the door to federal oil control also.

President Roosevelt's plans regarding the natural resource industries are much disputed, but it seems likely that he will seek specific legislation for each industry — such as a new Guffey Law for coal — rather than any general, over-all legislation.

The rumor won't stay dead that Secretary of Interior Ickes has hidden away in his desk a bill to regulate the oil industry from the producing well to filling station pump.

The coal people can be expected to take a hand in shaping oil legislation. They have not given up their plans for "equalizing competition" between coal and oil by regulations, discriminatory taxes or other means.

The idea that oil should not be used for heating purposes has strong support within the Roosevelt Administration—not to mention the coal industry. At the time of the World Power Conference here in September it was first pointed out by NATIONAL PETROLEUM NEWS how widely this policy was favored in some governmental quarters.

Federal taxes on gasoline and lubricating oil expire in July. Supported by the states and the argument that increasing revenues make these taxes unnecessary, the oil industry and motoring public may block their extension.

The co-operatives have a friend in the new Minnesota senator, Ernest Lundeen, of Minneapolis.

President Roosevelt's intentions regarding encouragement of consumer co-operatives has many people guessing, including the co-op promoters themselves.

Most observers agree that his flurry of interest in the co-operative idea last summer was not entirely a political gesture. He may use it as a big stick to protect the consumer.

The Scott Bill appropriating $75,000,000 to finance consumer co-operatives attracted little attention last session. But it has been widely talked of since, and may be given a play by the incoming congressmen.

Some sort of clarifying amendments for the Robinson-Patman Law seem in order. Congressman Patman, of Texas, has a new bill to divorce manufacturing and retailing — refining and marketing, but it seems headed for much opposition.

Legislation of this sort, along with other proposals for tightening up the anti-trust laws, depends largely on President Roosevelt's program; especially if he intends to revive the NIRA idea through voluntary agreements. There is little use tightening up the anti-trust laws, if they are going to be suspended again.

The labor unions undoubtedly helped roll up the Roosevelt vote. But the margin was too great for them to claim entire credit. With his huge popular endorsement, aside from the unions, Roosevelt may feel free to exercise his own judgment in handling labor problems.

That brings up the remark heard here frequently — that in his second term Roosevelt has the opportunity to lay aside politics and become a statesman.

Labor unions are already talking loudly about their legislative plans, including amendment of the Social Security Law to wipe out the provisions for employe contributions. They probably will seek to amend the Walsh-Healey Law so that only unionized plants can obtain a government contract.

Divorcement of pipelines has been a dead issue for two years. Senator Borah introduced a divorcement bill early in the last Congress but it slept undisturbed in committee. But the pipeline rate case before the Interstate Commerce Commission, and the impending valuation reports, may revive interest in such legislation.

OTHER transportation legislation will come before Congress. The Pettengill Bill repealing the long-short haul clause passed the House last session and probably would have got by the Senate too, had not Chairman Wheeler kept it in committee.

The increasing inroads of barges and trucks into the railroads' traffic will spur the rail carriers to a new effort for speedy enactment of this legislation.

The railroads would not look with disfavor on new legislation to hamstring the buses and trucks. They are also enviously eyeing the increasing volume of private automobile travel. But the massed power of 20,000,000 car owners still stands in the way.

Another attempt at federal regulation of barges, tankers and other water carriers seems definitely in the cards. The Wheeler Bill, once endorsed by President Roosevelt, may be brought out and dusted off. In its original form, this measure would subject the water carriers to regulation more stringent than that imposed on the railroads.

L. H. Gray Killed

TYLER, Tex. — L. H. Gray, president of the Southern Oil & Refining Co. and Southern Pipe Line Co., operating in the East Texas field, was burned to death in a Tyler hotel room Nov. 5.

The Editor's Viewpoint

Wanted: Industrial Statesmen

By Warren C. Platt, *Editor*

By Teletype

CHICAGO, Nov. 10

DIFFICULT and harrassing times are before the oil industry as well as before all industries. The outcome of this last election most definitely marks the beginning of an era in which our industry requires a higher type of industrial statesmanship than we have ever shown, if we are to keep out of increasing difficulties or even do a fair job in facing them.

President Byles, in this opening address before the American Petroleum Institute here today, sounded this warning when he said: "Inherent in the complex industrial and economic society of today are the seeds which may develop into tragedy or triumph for humanity. The determination of this issue calls for patriotism, and industrial as well as political statesmanship of the highest order."

A few minutes later Chairman Thompson of the Railroad Commission of Texas and also chairman of the Interstate Oil Compact Commission, sounded the challenge to the biggest issue before the oil industry and before all industry today — Government control from Washington. Chairman Thompson bluntly said right at the start of his address on Accomplishments of the Oil States Compact:

"It helped defeat federal control," Col. Thompson said. "If it has done nothing else and never does anything more, its existence is gloriously justified. I look upon the federal control and the attempted regimentation of oil as the beginning of a drive to regiment all productive enterprise — and I oppose it, as being contrary to our dual form of government, and contrary to the genius of Democracy."

Chairman Thompson's statement is of the greatest and most far-reaching political significance to the oil industry. It is rather authoritatively known that President Roosevelt wants more oil control in Washington; the Connally "hot" oil law expires next June and this law is the Federal Government's first Congressional move to exercise control over the industry, even though this law was sought by the oil states and concerns only preventing interstate shipments of illegally produced oil.

Chairman Thompson too has just won a signal victory at his state's polls in his re-election to the Railroad Commission, while the same voters of Texas also gave President Roosevelt a flattering plurality. As Texas has always fought valiantly for states rights, and never fought harder than during the development of the late oil code and the resulting oil legislation, it is fair to assume that Texas and its officials will insist that this vote the other week was an affirmation of its states rights ideas, including oil, and not an approval of the Roosevelt policy to exercise increasing control over business from Washington and his theory that states rights are of the "horse and buggy days".

With the opening of the new Congress in January the oil industry probably will be faced with the whole question of government in oil by the presentation of proposed bills. How many will be introduced and what they will concern is speculation today but the industry undoubtedly can assume that the proposed legislation will contain all sorts of ideas on what to do with the oil industry. The Connally law does not expire until June but the new legislation will come to the front at once.

The question then is what is the oil industry going to do?

President Byles, in his address to the American Petroleum Institute today said, "if democracy, which is based on the free competitive system, is to survive in this country it must be supported by a sound, which means an honestly informed, public opinion."

This has been the main contention of NATIONAL PETROLEUM NEWS ever since it started 28 years ago, in fact the chief reason for its being started was to give to the oil industry information which was kept from it by the influence of the then greater competitor. Our efforts since have been to give the industry all the information possible on its many problems and then to stir the industry to THINK. Our concern in these editorials is not so much to convince oil men of a point of view but, by our giving views with which men may disagree, views which may even sting men's minds, to get them to think and study and still further inform themselves of their problems.

When a large group of free business men, or any other class of Americans, have done this,

one need not worry about the outcome of the decision, whether it happens to agree with that of the advocate of a certain position or not. Well informed and THINKING men are not going to go very far wrong; in fact they will progress wherever it may be that progress leads.

One of our biggest issues that we raised at the start of the late code and have fought for ever since, was the degree of secrecy with which it was so frequently surrounded. We thought it a serious mistake, and said so, when Oil Administrator Ickes ordered secrecy for the deliberations of the Planning and Co-ordination committee and his PAB. We thought it a mistake and said so vigorously when the P. & C. committee submitted to such order without a fight, in fact we could not see why they should even have to fight over it, believing that they should have exercised without argument their right of American citizens and fulfilled the obligation they owed to keep the industry fully informed. We have not agred with the secrecy with which other activities of the industry are at times cloaked, even including the deliberations of the directors of the A.P.I.

So we can subscribe heartily to President Byles' fundamental that the oil industry's problems must have an honestly informed and sound opinion to be properly solved.

We therefore urge on the industry and on its higher officials that, as the industry approaches the period of its greatest political as well as economic crisis, every effort be made to see that it is fully informed on the issues and that all those who have to do with the leadership of the industry do everything in their power to inform if that each oil man may arrive at his own individual opinion from the same information that the leaders have.

Second, in this period of political trial and tribulation, when oil men once have arrived at their opinions they should not hesitate to publicly state and, when necessary, to fight for them. It is only by fair and honest and, when necessary, vigorous criticism that the industry and the country as well, can come through safely our period of difficulties.

During the start of the code and for much of its life, valuable criticism was hushed and withheld through fear of upsetting the country's recovery and also because those in high position, not only in the Administration but also in industry, did not relish adverse comment. Bureaucracy particularly is overly sensitive and opposed to criticism. That is outstandingly apparent from the four years of magnified bureaucracy at Washington.

Oil men should do all in their power to inform themselves on all the issues to come before the industry and the country and then should not hesitate to take their position and to maintain them frankly and when necessary forcefully. In that way only can the industry hope to travel the perilous road of the immediate future.

The issues and attacks whatever they may be on oil or on industry generally, will probably first show in Congress without benefit of official presidential blessing. In fact, Congress will probably start at lot of things of which the President may not have had warning and of which he may not approve. Never, probably, in the country's history has there been such a motley collection of all sorts of "isms," nuts, fanatics, demagogs, blatherskites and worse, with such few men of real ability, as we have in this present Congress. The chances are Congress will undertake to run away with the show and it is possible that all the special group leaders will get so involved in their own fights with each other that Congress as a law-making body may prove to be utterly impotent, for either good or evil.

But whatever Congress is and whatever the Administration espouses, each oil man should be ever alert, keeping himself fully informed and arriving at his own opinions and then not hesitating, regardless of circumstances, to state and hold to his opinions, so long as he believes them well founded.

To this end we of NATIONAL PETROLEUM NEWS will undertake to do a better job than we ever have done to help the oil industry get the facts on which to base its honest judgment.

Iowa Gross Receipts Tax Killed by U. S. Court

By Teletype

WASHINGTON, Nov. 10.—The so-called Iowa Plan of marketing through leased stations will not be affected by the U. S. Supreme Court's invalidation of the gross receipts tax section of the Iowa chain store law.

In knocking out the gross receipts tax as unconstitutional, the Supreme Court did not have to pass upon validity of the tax on units of a chain-store system. However, the unit tax has been upheld in principle by the court in the Standard Oil case of 1935 involving the West Virginia chain store tax.

The tax on units of a chain was the primary reason for the leasing of company-owned stations to individuals. Successful operation of the leased-station plan led companies to adopt it in other states, even where there is no chain store tax.

The gross receipts sections would have imposed a tax of $25 on gross chain store receipts of less than $50,000 annually, rapidly scaling upward to a maximum tax of $1000 on each $10,000 of gross receipts in excess of $9,000,000 annually.

Deny Pipeline Writ

NEW YORK, Oct. 28. — Supreme Court Justice Knapp at Rochester has refused to grant an injunction to prevent the Cabot Gas Corp. from constructing a natural gas pipeline from northern Pennsylvania to Rochester, according to reports here. The New York Central and Erie railroads sought the injunction on the grounds that laying pipe under their tracks would be dangerous.

New Test Method Will Increase "Q" Maximum 1.5 Octane Numbers

By ARCH L. FOSTER
N. P. N. Staff Writer

By Teletype
CHICAGO, Nov. 10

CHANGING of the octane number test method, which is involved in adoption of the so-called alternative method of knock rating in Ethyl Gasoline Corp.'s revised "Q" contracts with refiners, will cost these refiners from $7,000,000 to $10,000,000 per year, according to estimates made by prominent refining executives assembled here this week. The actual octane number of the average fuel, to meet competition, will be around 71½ if the alternative method is adopted.

And most refiners are of the belief that this method will be adopted by refiners, rather as a matter of competitive protection than for any necessity which the average car shows for a fuel of higher octane rating. The average car, even the 1936 and the on-coming 1937 models, do not need nor can they profitably use a fuel or higher knock rating, these technologists say.

The boost of the knock rating has been forced, many of them say, by the fact that some marketers, by clever refining practice, have produced motor fuels, with or without lead—mostly without it—which, although they do not exceed 70 octane number maximum set in Ethyl contracts for non-premium fuels, show a better performance in the average car on the road than do the majority of fuels on the market which show the same rating by the Standard motor method.

It is stated freely by refiners that the reason for the development of the optional method, the increase of the numerical octane number based on it, is that these few branded gasolines on the market were hurting sales of those companies not making fuels which show this appreciation in road performance over the laboratory rating, and that therefore it was necessary in some manner to permit these less favorably situated refiners to raise the ante on the "Q" maximum in order to compete. It is known that this condition has obtained in a number of cases throughout the country. Whether the situation was a figment of sales forces' brains, or actually was a difference of important magnitude is a matter on which options do not agree.

This margin between the motor method rating and the rating shown by cars on the road, as designated by the alternative method, appears to be about 1½ octane numbers. This will force refiners to use a greater amount of lead, the amount in individual cases being from 0.05 to 0.6 cc., so far as statements from individual refiner executives have been obtained. The necessity for as much as 0.6 cc. more for bringing a supposedly 70 octane number fuel up to 71-72 has not been explained. Because of this fact of being forced to use more lead, one refiner states that his company's extra bill for lead fluid will be $350,000 per year, a serious figure unless the market can be called upon to absorb the additional cost. Many of the refiners of course have not yet determined just what their additional cost will be, but one and all say it will cost more.

At least 70 per cent of the lead-using refiners in the country will be put to additional expense, one prominent and well-informed refinery head estimates. Of the remaining group, about half will have very little change in the amount of lead required. That is, their fuels show such a performance on the road that little if any more lead, or boost in laboratory rating, will be required to meet competition, this man states. The last 15 per cent of the refiners, he believes, will definitely have to use less lead. This estimate cannot be checked today with any certainty, but if only qualitatively true, it shows that the refining industry is in for more expensive refining methods of higher overall costs.

As a part of the background to this development, it is claimed that sales departments in the east have come, within the year, to their manufacturing departments with the complaint that the fuel they sell, made up to the maximum allowed under the Ethyl contract, does not permit them to compete on the road with some competitors' fuels, although each may be, and usually are, rated at about the same value by the motor method.

THIS of course means that the cars on the road do not rate fuels, nowadays, in the same degree or rating as does the standard method. Therefore, users of lead in non-premium fuels are handicapped in competition with other fuels, either those not using lead or those whose base stock is such as to take advantage of the higher road rating by cars even after making up with lead to the laboratory 70 standard since this 70 is maximum under the motor method.

Therefore, the story goes, these refiners so handicapped have yelled for relief from the maximum imposed under the existing conditions. To meet this situation, the new method, and the new numerical rating, has been inserted in contracts to enable these refiners to compete on "road rating" of fuels. At least one Pacific Coast refiner, it is reported, dropped the use of lead entirely, and increased the amount of cracked material in his gasoline, in order to meet this road competition on knock rating.

The matter of protest is waxing louder, among refiners. It remains to be seen just what they will do about it. Avoidance of adoption of the new method would obviate the necessity for using more lead, and

more severe cracking. However, at least one large refiner has already adopted the new method, we are told, and the competition pressure will doubtless will force other marketers in that large territory to do the same thing. The only means by which refiners can avoid this additional expense is either by using more cracked material, use more lead, or pass up the competitive picture occasioned by the road performance difference. It seems unlikely that the last named option can be maintained for any great period, although the actual disadvantage of having an apparent difference in performance is an unknown quality.

That the average car on the road does not need an increase in octane rating for satisfactory performance is almost unanimously agreed upon by refinery technologists. That the 1937 models are also built to use satisfactorily the same fuels is also considered a forgone conclusion.

The final decision on this matter should be based, executives say, on whether customers get value received, or whether the industry gets returns for the extra expense. If these points are answered in the negative then no reasonable excuse exists for adopting methods which will cause the industry needless expense. The history of knock rating during the last five years will or will not be repeated, depending on the decisions reached by all or practically all refiners as to the adoption or rejection of this optional method.

Offers to Prepay Freight On Anti-knock Fluid

NEW YORK, Nov. 7. — Ethyl Gasoline Corp. is asking its customers' approval of a revised clause in its contract providing for prepayment of freight on anti-knock compound when delivered in the company's tank cars or, when a reasonable distance from its plant, in its tank trucks. Date for the revision is set for Jan. 1, 1937.

The change is being made in the interest of safety, the company states in its letter to customers and effort is being made to discourage and eliminate shipments in drums. Drum shipments, however, will continue as before where necessary, with the buyer paying freight charges.

Oil Demand Continues 10% Increase Rate

WASHINGTON, Nov. 9.—Demand for gasoline and fuel oil continues to run more than 10 per cent ahead of last year, according to Bureau of Mines figures for the first nine months of 1936.

Domestic demand for gasoline from January to September, inclusive, amounted to 358,026,000 barrels as compared with 323,482,000 barrels in the corresponding nine-month period last year (with the figures placed on a comparable basis).

Demand for gas oil and fuel oil increased to 294,463,000 barrels from 262,179,000 barrels in the January-September period in 1935.

Similar increases were registered for other petroleum products. Kerosine demand was up to 36,018,000 barrels from 33,327,000 barrels while demand for lubricants amounted to 16,596,000 barrels as against 14,769,000 barrels last year.

September gasoline demand in the United States exceeded estimates of even the most optimistic observers, the Bureau of Mines reports, amounting to 44,346,000 barrels or 17 per cent higher than the comparable figure of a year ago. Besides this, gasoline exports totaled 2,491,000 barrels.

Demand for gas oil and fuel oil in September reached 34,151,000 barrels, or nearly 5,000,000 barrels higher than in the same month last year.

Daily average production of crude oil in September was 3,032,400 barrels, a decrease of 45,000 barrels from August. Texas fields accounted for practically all of the decline, with the combined output of the other states remaining virtually stationary.

Production in Rodessa field fell from 59,900 barrels daily to 59,400. But increased production in the coastal fields sent Louisiana's output to 232,200 barrels daily, a new high. New Mexico also set a new record with 76,200 barrels daily output.

Crude runs to stills in September averaged 3,029,000 barrels daily, breaking the record of 3,014,000 barrels set in August.

The price index for petroleum products in September was 57.5 as compared with 50.6 in September, 1935, according to the Bureau of Labor Statistics.

New Commercial Consumer Discounts Announced

NEW YORK, Nov. 9.—Standard Oil Co. of New Jersey has adopted a new commercial discount schedule in part of its territory. The schedule is retroactive to Nov. 2. Territory involved embraces Delaware, Maryland, District of Columbia, New Jersey, Pennsylvania, New York and New England.

Sales to both contract and non-contract commercial consumers will be as follows:

Accounts taking 500 gallons or more at one time by hose connection, consumer tank car price plus 0.5 cent a gallon.

Accounts taking less than 500 gallons by hose connection, consumer tank car price plus 0.75 cent a gallon.

Accounts not taking deliveries by hose connection, consumer tank car price plus 1 cent a gallon.

A similar schedule for commercial consumer sales is being used by many companies marketing throughout New York and New England, although none have made an official announcement to that effect.

Transferred to Advertising Dept.

CHICAGO—Waldo L. Gundlach, formerly handling sales promotion work with Standard Oil Co. of Indiana dealers has been transferred to the advertising department of the company in Chicago.

Jobber Contract Margins Basis of New Federal Grand Jury Indictments

WASHINGTON, Nov. 7

MAJOR oil companies are charged with violating the anti-trust laws by agreeing to restrict margins for Midwestern jobbers, in another indictment returned Nov. 6 by the federal grand jury at Madison, Wis.

Besides the charge of fixing margins, the indictment alleges unlawful agreements by the defendant companies to maintain uniform contracts and policies regarding jobbers in the ten Midwestern states comprising the so-called Standard of Indiana territory.

"In so doing," the indictment declares, "defendants have unlawfully eliminated, restricted, and suppressed competition among themselves in the solicitation of jobber accounts and in the sale of gasoline to jobbers in interstate commerce, and have unlawfully regulated and restricted the ability of said jobbers to compete with them and each of them, and with each other, in the sale of gasoline to retail dealers or directly to consumers."

Twenty-four oil companies, including virtually all of these operating in the Indiana territory, and 46 company officials are named as defendants.

These "unlawful agreements" were made at private meetings usually held at the Blackstone Hotel in Chicago, beginning in 1931, according to the indictment. Charles E. Arnott, of Socony-Vacuum Oil Co., who is one of the defendants, usually presided, it is charged.

The new indictment embodies charges which formed the original and basic complaint of the National Oil Marketers Association filed with Attorney General Cummings nearly 18 months ago.

A delegation representing the NOMA on June 18, 1935, called upon Cummings and asked that the Justice Department investigate and determine if there were any secret agreements among refiners in violation of the anti-trust laws to fix jobber margins.

An investigation was launched shortly thereafter, culminating in the federal grand jury proceedings at Madison which opened May 4, 1936.

The indictment returned Nov. 6 was the fourth so far. But, as the Justice Department points out in its announcement — perhaps significantly, the grand jury has not concluded its investigation.

The first and third indictments charged W. A. Tracey, Fort Worth, tank car gasoline buyer for Sinclair Refining Co., with perjury in his grand jury testimony. The second indictment, returned July 28, charged a conspiracy to artificially raise and peg tank car prices.

The latest indictment sets forth that the defendant major oil companies have together controlled, manufactured, shipped and sold more than 85 per cent of the total gallonage of gasoline distributed annually in the so-called Indiana territory.

In this territory there are more than 4000 jobbers, it is pointed out. Approximately 50 per cent of all gasoline distributed to retail service stations in this territory is distributed by or through jobbers.

"Great numbers of jobbers have been engaged in the distribution of gasoline during the period covered by this indictment and for many years prior thereto and their investments in capital assets have been and are substantial," the indictment declares.

For many years prior to the "conspiracy", the indictment's first count alleges, the guaranteed margin in jobber contracts was the subject of active competition among the supplying companies.

But, beginning in 1931 and continuing down to date of the indictment, it is charged, the defendants by unlawful agreement have fixed and restricted jobber margins.

In this manner the Midwestern jobber margin was uniformly fixed about December, 1934, at 5.5 cents below the prevailing normal retail price, the indictment alleges.

In the second count, the indictment charges that the defendants "unlawfully agreed upon and adopted by concerted action" alleged uniform provisions for:

Limiting the length of jobber contracts to one year, subject to automatic renewal unless cancelled before the specified period.

Determining the basic price to jobbers.

Selling gasoline only on the basis of all-rail delivered prices f.o.b. Tulsa.

Fixing minimum prices to jobbers.

Automatically and uniformly changing jobber margins in accordance with changes in discounts allowed to dealers.

Setting minimum and maximum monthly and annual gasoline requirements of the jobber.

This count also charged that it was agreed not to include in jobber contracts any guarantee of protection against local price cuts.

The third count alleges that the defendants unlawfully agreed, among other things, to refrain from taking on new jobber accounts, selling to so-called cut price jobbers, giving any local protection on third

grade gasoline and limiting the amounts of local protection given any jobber.

In support of these policies, the defendants are alleged to have fixed uniform commissions for commission agents selling in competition with jobbers.

Four New Companies Appear In Second Indictment

The 24 companies and 46 individuals named in the second indictment for violation of the anti-trust laws returned by the federal grand jury at Madison, Wis., late Nov. 6 in the main correspond with those named in the first indictment returned July 28.

However, the price reporting publications named in the first indictment, PLATT'S OILGRAM, NATIONAL PETROLEUM NEWS and the *Chicago Journal of Commerce*, do not appear in the second indictment, nor do the names of Warren C. Platt, president of the OILGRAM and NATIONAL PETROLEUM NEWS, and Keith Fanshier, petroleum editor of the *Chicago Journal of Commerce*.

Also the names of the officers of the Western Petroleum Refiners Association named in the first indictment do not appear in the second; Clyde M. Boggs, president and A. V. Bourque, secretary and treasurer.

The following four companies are named in the second indictment but do not appear in the first: Ohio Oil Co., Findlay, O.; National Refining Co., Cleveland; Marathon Oil Co., of Tulsa, a subsidiary of the Ohio Oil Co., and the Cities Service Oil Co. of Tulsa.

The following individuals are named in the second indictment but do not appear in the first: L. L. Marcell, general manager, White Eagle Division, Socony-Vacuum Oil Co., Inc.; Howard A. Coffin, general manager, White Star Division, Socony-Vacuum Oil Co., Inc.; Amos Ball, general sales manager, Standard Oil Co. of Indiana; W. H. Merritt, vice-president and general manager, Cities Service Oil Co.; G. C. Morris, sales manager, Pure Oil Co.; L. Van Eeghen, formerly vice-president, Shell Petroleum Corp.; R. D. Ebbert, manager, tank car sales, Shell Petroleum Corp.; S. B. Wright, territorial manager, The Texas Co.; C. L. Fleming, vice-president, Ohio Oil Co.; N. T. Stover, general sales manager, Ohio Oil Co.; L. B. McCammon, general sales manager, Marathon Oil Co.; W. T. Atkins, vice-president Skelly Oil Co.; H. A. Lewis, assistant general sales manager, Standard Oil Co. of Indiana.

Three oil companies named among the 23 defendants in the first indictment do not appear in the second indictment just handed down. They are Gulf Oil Corp., Cities Service Export Oil Co. and Louisiana Oil Refining Corp.

The following individuals named in the first indictment are not cited in the second: E. G. Seubert, president, Standard Oil Co. of Indiana; E. J. Bullock, vice-president in charge of purchasing, Standard of Indiana; Ira A. Smith, buyer at Tulsa for the Standard of Indiana; John A. Brown, president, Socony-Vacuum Oil Co., Inc.; Frank R. Coates, vice-president of Empire Oil & Refining Co. and of Cities Service Export Co.; H. E. Brandli, vice-president and general manager, Cities Service Export; D. W. Harris, general manager, Louisiana Oil Refining Corp.; John A. Welch, sales manager, Louisiana Oil Refining Corp.; J. F. Drake, president, Gulf Oil Corp. and Gulf Refining Co.; H. C. Meyer, Gulf Refining Co.; O. H. Carlisle, Gulf Refining Co.; Dewey K. Chamberlain, manager Tulsa Division, Pure Oil Co.; E. W. Sinclair, president, Sinclair Refining Co.; R. D. Cottingham, assistant to the president, The Texas Co.; P. C. Scullin, vice-president and general manager, Indian Refining Co.; Noel Robinson, vice-president, Tide Water Oil Co.; R. O. Audrain, buyer, Tide Water Oil Co.; Thomas Fitzgerald, assistant to the vice-president in charge of sales, Mid-Continent Petroleum Corp.; H. E. Koopman, vice-president in charge of purchases, Phillips Petroleum Co.; James Nagle, in charge of wholesale sales, Skelly Oil Co.; B. L. Majewski, vice-president in charge of sales, Deep Rock Oil Corp.; Keith Fanshier, petroleum editor, *Chicago Journal of Commerce;* Warren C. Platt, Cleveland, president PLATT'S OILGRAM and NATIONAL PETROLEUM NEWS; Clyde M. Boggs, president, Western Petroleum Refiners Association; A. V. Bourque, secretary, Western Petroleum Refiners Association.

THE indictments list a number of persons as having attended the Blackstone hotel meetings who are not indicted. Included in this list are: C. B. McCollough, W. H. Ware, and R. D. Mering, representing Socony-Vacuum; R. A. Raupaugh, representing Standard of Indiana; P. M. Miskell (now deceased), representing Cities Service, Empire and Cities Service Oil; George J. Woods, representing Continental; R. R. Johnston and G. R. Nutty (now deceased), representing Gulf; J. G. Sinclair and Frank E. McSweeney, representing Sinclair; D. S. Wixson and Walter J. Herr, representing Mid-Continent; H. A. Trower, N. S. Moon, E. M. Kelly and John A. Getgood, representing Phillips; H. B. Carpenter, representing Ohio Oil; Joseph F. Adams, representing Barnsdall; C. S. Smith, representing National; Bernard L. Majewski, representing Deep Rock; C. W. Mackay, representing Marathon; and Martin G. Peeters, representing Wadhams.

Conservation is Best Promoted by Proper Well Spacing, Byles Tells A.P.I.

CHICAGO, Nov. 10

PROMINENT in all discussion of planning for a more orderly and better balanced development of oil fields is the subject of well spacing. It is currently receiving attention from trade associations and prominent producers are urging that most serious attention be paid to reduction in drilling of wells that do no more than duplicate the work of other wells.

On this theme, Axtell J. Byles, president of the American Petroleum Institute, included pertinent remarks in the course of his annual address to the Institute Tuesday.

"No single development has been more important or more far-reaching in its effect than the work on well spacing," he said. "Engineers now generally agree that under a system of regulation which provides for the conservation of the natural energy of the oil pool, close spacing of wells is not necessary to obtain the greatest recovery in most pools. By taking advantage of the economies possible by drilling fewer wells, the industry has developed many of the great flush fields, discovered in recent years, in such a manner as to permit a maximum adherence to sound conservation, viz:—orderly operation at production rates low enough for both efficient recovery and economic practicality.

"Unfortunately, the practice of drilling only those wells which are necessary to recover the oil in the ground has not yet been universally adopted; yet it has been demonstrated that in some fields close drilling has resulted in a tremendous investment in unnecessary wells, has substantially increased production costs, and has worked in opposition to the efforts made to promote conservation and sustain such economic conditions throughout the industry as will permit and promote the best production practices.

"The reason for this condition should be explained. In the interest of conservation, it is necessary to restrict the production of most new fields below a certain limit in order to prevent physical waste. From both conservation and practical considerations, it is often necessary to restrict production to accomplish a balance which will prevent physical waste in marginal areas in the same governmental jurisdiction. Production, limited in this manner, must be apportioned equitably between the wells in the pool. The greater the number of wells, the lower is each well's production. Legally, there is a limit below which the production of a well will not be cut by state authority, because of both marginal wells laws and confiscation.

"When unnecessary wells are drilled (even though every well in the field is allowed to produce only the minimum production), the production of the field may be so high as to create some phase of physical waste and exceed normal outlet. The effort of the conservation authorities, in their broad endeavor to prevent physical waste in marginal wells or pools, compels further restriction elsewhere. In many instances, the pools with wide well spacing have borne the brunt of such restriction in allowable. For this reason, an unsatisfactory condition is rapidly developing. . . .

"Wider well spacing can be brought about in two ways: One is by advocating that the conservation authorities adopt well spacing patterns which will be consistent with both sound conservation and sound economy; the other and better method is to advocate the adoption of adjusting allowables in such a manner that each operator will be given an equal opportunity to recover his fair share of the oil in the reservoir. Under this plan, once an operator has drilled the required or permitted wells on his property, he could not thereafter increase his allowable by drilling additional unnecessary wells. Thus the economic incentive to drill unnecessary wells would be removed."

PRESIDENT BYLES mentioned favorably the work of the Interstate Oil Compact, but there was a staunch and directly interested champion of that instrument of regulation present to speak at greater length. This was Col. Ernest O. Thompson, chairman of the Compact and chairman of the Texas Railroad Commission. He told of the compact's accomplishments at the Tuesday general meeting. In his words, the Compact has accomplished the following results:

"1. It helped defeat federal control. If it had done nothing else and never does anything more, its existence is gloriously justified. I look upon the federal control and the attempted regimentation of oil as the beginning of a drive to regiment all productive enterprise—and I oppose it, as being contrary to our dual form of government, and contrary to the genius of democracy.

"Production is not com-

merce; and if it be not commerce, then it follows it cannot be interstate commerce—and, therefore, production cannot under our constitution be a matter of proper Congressional concern, because Congress cannot regulate unless it be a matter of interstate commerce because Congress just does not have the power to regulate production. The sovereign states have the *exclusive* power to control production.

"The interstate compact is a legal, constitutional method for the states acting together.

"2. It has won the almost universal and unstinted support of the industry. All groups, both major and independent, have taken an active interest in the work of the compact.

"3. The compact commission has made a thorough study and survey of the conservation laws, rules and regulations of all the oil-producing states, and is preparing a uniform law incorporating the proven best features from each state. These suggested statutes will be sent to the legislatures of each of the 20 oil states for consideration.

"4. It has counselled with the U. S. Bureau of Mines on various occasions, and has tried to be helpful to this impartial fact-finding statistical agency of the federal government.

"5. It was instrumental in securing an appropriation of $55,000 from the last Congress for the support of the U. S. Bureau of Mines for the purpose of continuing its helpful forecast of market demand for crude oil and the recommended production to come from the respective states.

"Also, for the actual physical check of crude oil in storage to ascertain the exact gasoline content of the 290,000,000 bbl. of crude now carried in the statistics as 'crude stocks'.

"The U. S. Bureau of Mines reported to us, on our visit to them last month, that this survey was progressing; that the statistical data was complete, and that the cans to contain samples for analysis taken from tanks had been received.

"This idea of making a shake-down physical-content inventory of crude-oil stocks on hand throughout America was sponsored by the Interstate Oil Compact Commission, and a committee from the Interstate Oil Compact Commission went to Washington to convince the U. S. Bureau of Mines of its desirability, and succeeded in getting the U. S. Bureau of Mines to make the appropriation for it. It is the belief of the compact commission that more accuracy in storage and potential figures will really be of benefit to both regulatory bodies and the industry. We call upon the industry to cooperate to the fullest extent in this disclosure of actual conditions on crude stocks, as it will be of great ultimate benefit to the industry.

"6. Succeeded in getting the U. S. Bureau of Mines to desist from taking withdrawals from storage into consideration when making forecasts of sources of supply to meet the November 1936 demand.

"7. Has held meetings in Oklahoma, Texas, and an informal meeting in California; and has brought about amicable relations and trustfulness between the oil states, and has won the respect of the industry it helps to regulate.

"ALL this has been accomplished in the one short year of our compact's existence."

Legislative proposals the oil industry may expect next year, with congress and 43 legislatures meeting, were outlined by General Baird H. Markham, director, American Petroleum Industries Committee, in an address Tuesday at the general session.

These are efforts of unfriendly interests to hamper highway transportation developments, restrictive laws to equalize competition, increasing gasoline tax rates to finance luxury highways, and diversion proposals.

"Visionaries probably will continue their attempts legislatively to compel our customers, the motorists, to use as motor fuel a blend made by adulterating economical gasoline with expensive alcohol," General Markham charged.

Favorable legislative events of this year were reviewed by General Markham, such as defeat of an 8-cent-a-gallon lubricating oil tax, proposals in several taxes to increase the gasoline tax rate, imposition of a fuel oil tax, and proposals in several states for diversions failed.

Tax reductions were noted also, including a reduction in the rate in one state, and the repeal of several county and municipal gasoline sales taxes. The speaker noted gasoline tax evasion investigations in several states that led to prosecutions, and the postponement of vehicle registration dates in several states.

Such accomplishments of industries committee members, termed by General Markham as "Minute men of 1936," were helpful to the industry and its customers and "were also real contributions to the cause of sound taxation and legislation, economical government, good government."

General Markham outlined the organization of the industries committee down to county organizations, now functioning in 47 states and in 1923 counties. In addition there are 309 district committees. County committees have 17,000 members.

The speaker also reviewed the high tax burden carried by the industry, with emphasis on the point that gasoline sales taxes now average 40 per cent of the retail price.

General Markham urged the moral and personal support of all members of the oil industry, and active participation in state and county organizations.

In a speech prepared for delivery Wednesday, Congressman Samuel Pettengill, Indiana, author of the book "Hot Oil", declares that there is a "pressing need of industrial statesmanship of the highest order" in order to preserve free enterprise in the United States.

If free enterprise is to be saved, Pettengill said, it will be done chiefly by "industrial self discipline". He chided business men for being too ready to blame the "brain trust" and a "rubber stamp" Congress for

the trend toward regimentation and collectivism.

He pointed out that the NIRA, AAA, and similar legislation resulted, first, from the breakdown of capitalism, and, second, at the urging of the capitalists.

"Coming nearer to home," Pettengill told the oil men, "what bill in recent years had more of the essence of collectivism, the destruction of States' rights, the regimentation of enterprise, than the Thomas - Disney bill which would, if enacted, give an official at Washington the power to fix the daily production of petroleum from every well in America, and therefore, the income of the owner and the price paid by the buyer.

"Again, without discussing the merits or necessity for the bill," he added, "it is the simple truth that it was the representatives of the industry itself who rushed to Washington crying, 'O beneficent bureaucrats, O excellent Ickes, O marvelous Margold, uncontaminated as you are with any knowledge of the problem of petroleum, and with that high detachment and objective viewpoint resulting from never having seen an oil well, save us ere we perish, save us from ourselves!' "

Mr. Pettengill said it was difficult for him to understand how leaders of an industry, such as the public utility holding companies, could do such a marvelous job on their plants and equipment, and "be so utterly dumb and deaf and blind on their public relations."

He went on to say that if the leaders and owners of the American system are "too lazy to wash their dirty dishes, too selfish to be intelligent, and too timid to stick their necks out in defense of free enterprise and constitutional government, *who will defend it?*"

As an individual the average business man is practically helpless, said Pettengill, suggesting that trade associations as well as the large companies could well afford on their boards a public relations man.

The responsibility of such a man would be public relations in the broadest sense—"a man of unimpeachable integrity to act as a tribune for the people whose constant care it shall be that the priceless ingredient of character and fair dealing with worker and customer and people and government shall be woven into the fabric of free enterprise."

L. M. Moffitt

Pursuing the idea further, he suggested a Supreme Council of American Enterprise which would report from time to time on "the state of the Union."

Continuing, he said "I know the average business man is just as anxious to deal fairly with his men and with the public as the average politician. I would rather have the judgment and conscience of the man who is close to his men and the public, than the *ipse dixit* of the intelligentsia who rule the universe from their garrets or their thrones."

Early Producer Dies

TULSA, Nov. 7.—J. T. McSpadden, 84, pioneer banker and rancher at Chelsea, Okla., died Nov. 5. As a banker he played considerable part in the development of the Rogers and Nowata county fields in the early part of this century. His widow, a sister to the late Will Rogers, and six children survive him.

Moffitt Heads La.-Ark. Producer Ass'n.

SHREVEPORT, La., Nov. 5.—Members of the Louisiana-Arkansas division of the Mid-Continent Oil & Gas Association, at the annual meeting here Nov. 5 elected L. M. Moffitt of Shreveport president and re-elected Arthur Campbell secretary. Mr. Moffitt, official in the Triangle Drilling Co., succeeds D. W. Harris of the Arkansas Natural Gas Corp. as president of the division.

Vice-presidents named for 1937 included Mr. Harris; J. S. Hasson, Ohio Oil Co.; Charles G. Laskey, Belchic & Laskey; J. R. McWilliams, Standard Oil Co. of Louisiana; and C. R. Minor, Gulf Refining Co., R. F. Sebastian was elected treasurer.

F. Ray McGrew, Standard Oil Co. of Louisiana, and C. N. Black, Magnolia Petroleum Co., were named to the board of directors of the general Mid-Continent Oil & Gas Association.

The following were named chairmen of the association's various committees:

Taxation, John Hammerman, Gulf Refining Co.; Finance, R. L. Benoit, Ohio Oil Co.; Legal, H. C. Walker; Membership, A. R. Carmody, North Central Texas Oil Co.; Executive, R. E. Allison.

That the association has made considerable progress in the past year under the direction of Mr. Campbell was indicated by the report of membership and of the organization's activities.

Former Texaco Attorney Dies

TULSA, Nov. 7.—Horace H. Hagan, 45, Tulsa attorney, died in a Tulsa hospital the night of Nov. 3, following a heart attack.

Since early 1934 he had been special assistant to the U. S. Attorney General and had charge of the prosecution of several outstanding cases. He was widely known in the Mid-Continent oil industry and was once a member of the legal department of The Texas Co. at Tulsa.

Indiana Senator Tells Jobbers Country Will Not Run Wild

By E. L. BARRINGER
N. P. N. Staff Writer

INDIANAPOLIS, Nov. 5 ASSURANCE that the country will not "run wild" and that the Robinson-Patman act is a workable piece of legislation to curb chain store abuses were given Indiana jobbers today by their senior U. S. senator, Frederick Van Nuys.

Senator Van Nuys was billed to speak today on the Robinson-Patman act at the final session of the Indiana Independent Petroleum Association convention. Yet it was obvious in view of Nov. 3 election results that any utterance from one high up in Democratic circles regarding the future was eagerly awaited by oil men somewhat groggy from trying to interpret the meaning of the election returns.

A rather conservative 12 months was forecast by the senator, after telling jobbers that the country is not going to "run wild". The temper of President Roosevelt is similar to what would have been the temper of Governor Landon, he said.

The senator also told jobbers that he subscribes to the principle that government should not go into competition with business, and that as soon as business men can run business he would be one of the first to remove temporary laws now regulating business.

"We are going to preserve the capitalistic system and constitutional government," he told jobbers.

Watch the growth of co-operative merchandising in this country from now on, the senator advised oil men, but did not amplify the point.

Chain store virtues, in some directions, are recognized, the senator said in speaking about the Robinson-Patman act, such as better service, more efficient operation and putting independent merchants on their mettle. From recognition of these virtues the senator then hit advantages of chains naming allowances for advertising and window trims.

Birth of the act was credited by the senator to a contract between a mail order house and a tire manufacturer giving special concessions granted to get the mail order house's business.

"We're going to stop that kind of unfair competition," he shouted.

The Federal Trade Commission, that administers the act, was praised by the senator and credited with being "one of the most wholesome surroundings of the bill."

Senator Van Nuys had a similar bill in the senate, was chairman of the conference committee that handled the Robinson and the Patman acts, and told oil men that editorial comments charging the bill was a hurried piece of legislation were "absolutely untrue."

The senator briefed some of the provisions relating to how a seller may charge a different price based on method of manufacture, difference in selling costs and delivery and said that merchants operating in good faith had no reason to be afraid of the act.

That there may be some bugs in the bill was admitted by the senator but he said that he would be the first to get them ou.t

A plea for oil marketers to educate the public in the proper servicing of their cars was made at the convention by A. H. Frost, automotive engineer, Socony-Vacuum Oil Co., Detroit.

The car of today is different from that of five years ago, he told jobbers, and it is easy to slip today's smooth, quiet, speedy automobile up to 70 miles an hour. Yet the customer does not realize that advancing the speed from 30, to 60 miles, an hour requires four times more power.

Some points for marketers to consider in properly servicing today's car given by the speaker were:

Correct motor oil grade. In turning from heavy oils the industry has swung to oils as thin as water. Somewhere in the middle is the correct grade.

CRANKCASE draining. Quality oil cannot be worn out but contamination from metal and road dust ruins oil. Crankcase ventilation systems remove dilution but motorists should get their cars out on the road every few days in the winter for a real engine warm up to enable the ventilating system to operate efficiently.

Motor warm-up. Mr. Frost reminded jobbers that when a motor is turned off eight or nine charges of raw gas are pulled in the cylinders. This cuts the oil off the engine cylinder walls. Bearings go out when a cold motor is raced.

Oil filters. Oil filters are good, he said, however, they will take out abrasives but not water or dilution from the oil. Claims for filters that they can be used forever were termed unfortunate.

In discussing hypoid gears Mr. Frost urged transmission drains more often than the seasonal change-overs, if the car is driven long mileage during the season.

A warning was given jobbers also in front wheel lubrication service not to replace bearings too tight, or too loose. "Have a heart when you touch those front wheels," he said to jobbers.

The third speaker on the program of the final session was Carl Barker, public relations director, Shell Petroleum Corp., St. Louis, speaking on taxation. After reminding jobbers of how taxes threaten expansion pro-

grams and that a tax on one branch of the industry is reflected in other branches, he urged jobbers to have a strong public relations policy to keep customers fully and accurately informed about taxes.

The first day's program was on the "Iowa Plan" with an address by E. L. Barringer, NATIONAL PETROLEUM NEWS staff writer.

In business sessions jobbers adopted a resolution commending an address by Warren C. Platt, publisher of NATIONAL PETROLEUM NEWS, before the National Oil Marketers Association convention outlining the jobbers' immediate problems.

The association also is to seek exemption of gasoline from the state 1 per cent gross income tax on account of taxation already applied to motor fuel. A legislative committee representative of all branches of the industry is to be appointed to seek such exemption.

Robert M. Stith, Stith Petroleum Co., Indianapolis, was elevated from vice-president to president, succeeding Louis J. Scheidt, Power Plus Oil Co., Columbus, president for three terms.

A. L. Stallings, Indiana Farm Bureau, Indianapolis, was elected vice-president. C. E. Foreman, Mid-Western Petroleum Corp., Indianapolis, was re-elected treasurer and George W. Hofmayer, Indianapolis, was re-elected secretary.

All directors were re-elected. They include the two jobber officers, Mr. Scheidt; Frank S. Glenn, Glenn Oil Co., Muncie; C. W. Huber, Crown Point Oil Co., Crown Point; and George H. Lilly, Hoosier Petroleum Co., Indianapolis.

New Mexico Allowable

TULSA, Nov. 7. — Allowable production for fields of New Mexico totals 83,500 barrels daily for the first half of November, by order of the state Oil Conservation Commission. This is an increase of 500 barrels daily over the last half of October.

Indiana Association Endorses NPN Marketer Program

A RESOLUTION was adopted by the Indiana Independent Petroleum Association, at its annual meeting here, commending Warren C. Platt, editor and publisher of NATIONAL PETROLEUM NEWS, for his suggested policies to the independent marketers of the country as contained in his address before the National Oil Marketers Association in Chicago Oct. 27.

The resolution urged that N.P.N. and other oil publications continue to advocate that marketers, as well as the industry generally, take part in the conservation program by presenting to conservation officers the viewpoint of the public on this subject and that they also encourage open market buying to stabilize the tank car markets.

Mr. Platt's address which was the subject of the resolution, "What Tomorrow Holds for the Jobber", was published in the Oct. 28th issue of NATIONAL PETROLEUM NEWS, starting on page 28. The resolution of the Indiana petroleum association was as follows:

"Be it resolved: That the Indiana Independent Petroleum Association, while holding its annual meeting, discussed in open forum the address you presented before the National Oil Marketers Association at Chicago, October 27, 1936. It was the unanimous opinion of all present that your understanding of the ills confronting the petroleum industry, and your recommendations for corrections as expressed in that address are fundamentally sound.

"It was our opinion that, if the industry will approach and give full consideration to your recommendations, that this industry will gradually find itself leveling to a more permanent and sound economic basis. The stability to be gained will be beneficial in our judgment to the entire industry, both independent and major operators.

"We, as an organization, urge that the NATIONAL PETROLEUM NEWS and other oil publications adopt an aggressive editorial campaign, developing the needs and advantages to be obtained by oil men actively participating in movements of state conservation and proration of the petroleum products by opposing marginal and restrictive contracts; encouraging and developing the advantages of stable markets by open market buying and the need for fostering further development of independent and individual trademarks."

Daily Average Production. Important Districts, American Petroleum Institute Figures

	Week Ended Nov. 7 Barrels	Oct. 31 Barrels
Oklahoma City	107,300	139,750
Total Oklahoma	526,800	564,750
East Texas	440,550	439,650
Total Texas	1,156,700	1,193,950
Rodessa	56,900	54,400
Total Louisiana	234,200	233,250
California	586,400	567,600
East of Rockies	2,387,400	2,475,900
Total U. S.	2,973,800	3,043,500
Crude Imports	108,570	60,860
Total New Supply	3,082,370	3,104,360

Upholds Tennessee Tax Collection

WASHINGTON, Nov. 9.—The U. S. Supreme Court today declined to interfere with Tennessee in its attempt to collect gasoline taxes from Earle Hudson and the Dixie Oil Co. of Davidson County. In Tennessee properties are siezed under distress warrants for failure to pay gasoline taxes. The state alleged that Hudson owed taxes totaling $8018 and Dixie Oil Co. $2471.70.

Oil Companies Protest Continuance Of Railroad Rate Surcharges

WASHINGTON, Nov. 9

ALLEGING that in the light of facts cited by them that it was evident that unreasonable and discriminatory freight rates would be established on petroleum and petroleum products if the petition of the railroads were granted 27 of the country's largest oil companies have asked the Interstate Commerce Commission to deny the latest move made by the railroads for a continuance of surcharges on petroleum and petroleum rates after the present surcharges expire by limitation with the end of the present year.

It is pointed out by the protesting oil companies that the present rates on their traffic were established by the regulating body in a large number of formal cases. The protest asserts that the rates are extremely high and in many instances were prescribed as the highest possible reasonable rates.

A further assertion by the petroleum companies is that since such rates became effective the railroads have found it necessary in many instances to depart from the maximum levels in an effort to meet competition with other modes of transportation. The fact that such reductions would have to be made the protesting oil companies assert was foreseen by Commissioner Eastman in a dissent in the general petroleum case brought by the Commission under the Hoch-Smith resolution. Eastman in that case said that if the carriers wished to secure as much revenue as possible from petroleum traffic they would do well to disregard these maximum rates permitted and to devote their attention to existing competition and still more to that which could be foreseen in the near future.

The oil interests, in asking the Interstate Commerce Commission to prevent an extension of the present surcharges, called attention to the fact that the industry did not protest or object when, as an emergency matter, the surcharges first were imposed a few years ago. One of their objections to the present proposals is that if permitted to be established the rates would bring about disruption of rate relationships as between various kinds of petroleum products which differed from the relationship fixed by the Interstate Commerce Commission in various formal cases decided by that regulatory body.

This protest against continuance of the surcharges was made by the Atlantic Refining Co.; Cities Service Oil Co., Cities Service Refining Co. of Massachusetts; Colonial Beacon Oil Co., Inc.; Cosden Oil Corp., Cosco Oil Co.; Empire Oil & Refining Co.; Freedom Oil Works; Gulf Oil Corp.; Gulf Refining Co.; Indian Refining Co.; Kanotex Refining Co.; Lion Oil Refining Co.; National Refining Co.; Pure Oil Co.; Root Petroleum Co.; Shell Union Oil Corp.; Sinclair Refining Co.; Socony-Vacuum Oil Co., Inc.; Standard Oil Co. (Indiana); Standard Oil Co. of Ky.; Standard Oil Co. of La.; Standard Oil Co. of N. J.; Standard Oil Co. of Pa.; Sun Co., Sun Oil Co.; Texas Co.; and Tide Water Oil Co.

Indiana Standard Builds New Lake Tanker

CHICAGO, Nov. 6.—The Standard Oil Co. of Indiana is augmenting its Great Lakes Fleet. Contract has been awarded to the Manitowoc Shipbuilding Co., at Manitowoc, Wisconsin.

The new vessel is to be of single deck type, with an overall length of 465 feet, 55-foot beam, and molded depth of 28 feet. It will have a capacity for 6500 deadweight tons, or 45,000 barrels of petroleum products, on a draft of 18½ feet.

The ship will be powered by oil fired boilers and triple expansion engines of 2500 horsepower.

Construction will start at once. Delivery of the tanker is expected late next summer. N. J. Plumart is architect.

The present Great Lakes fleet of the Indiana company consists of four steamers, one barge and one tug.

The company has marine terminals at Muskegon, Bay City and Detroit, Michigan, and Superior and Green Bay, Wisconsin. Shipments are made from the Whiting, Ind. refinery of Standard.

Jersey Company Employes To Be Paid Bonus

NEW YORK, Nov. 6.—In addition to declaring an extra dividend of 75 cents a share and the regular semi-annual dividend of 50 cents a share, directors of the Standard Oil Co. (N. J.) today recommended that extra compensation be paid to employes out of 1936 earnings.

The board recommended that its subsidiaries and affiliated companies make the bonus payments, which are estimated will amount to $4,500,000 and which will benefit about 47,000 employes in the United States.

W. C. Teagle, president of the Jersey company, stated that the extra payments to employes were neither profit-sharing nor a wage readjustment. Wages are considered solely on their merits and are negotiated between employes and the management on the basis of the long established policy of paying at least the prevailing rates in each locality, he said.

Where the plan is adopted, the company's statement read, it will result in a distribution to each employe's account in the company's thrift plan of one week's pay, which in many cases will be increased by a further credit based on the employe's participation.

Construction Begun on 40-Mile East Texas Gasoline Line

DALLAS, Nov. 5

THE often discussed possibility of a gasoline pipeline from the East Texas refining district eastward to the Mississippi river appeared more certain of becoming an actuality this week when the East Texas Refining Co., through its president, Freeman W. Burford, announced construction had been started on a 40-mile pipe line from the Longview, Tex. plant to Lorraine, La.

President Burford in his official announcement stressed the point that at present the line, of 6-inch welded construction, will extend only to Lorraine, but that it is very possible the line will be extended on to Natchez, Miss., at a later date, "unless a 6.9 cents per 100 lbs. freight rate in 100 tank car lots from Lorraine to Fillston, La., already requested by the East Texas company, is granted by the Louisiana Public Service Commission." The decision on the request by the L. & A. Railway to grant such an intrastate rate, is expected about Nov. 15, a hearing already having been held by the Louisiana commission.

Of immediate interest, meanwhile, is the position of the East Texas Refining Co. in reaching markets even though the pipeline extends only to Lorraine. With storage at that point, which is just over the Texas-Louisiana line, the refining company will be able to ship into Standard of Indiana territory, and into the southeast on the same rate as the Shreveport refiners. For example, the rate from Shreveport to Chicago is 37 cents per 100 lbs., or 2.44 cents per gallon for gasoline, as compared with 39.5 cents per 100 lbs. or 2.61 cents per gallon from East Texas to the same destination.

On shipments to Chicago from Lorraine, therefore, the company will save a gross of 0.17 cent per gallon, and similar savings to southeastern points are expected to make this 40-mile line economically feasible.

The present rate on gasoline from Lorraine to Fillston, on the west bank of the Mississippi river where the L. & A. Railway touches that stream, is approximately 17 cents per 100 lbs. If the request for a rate of 6.9 cents per 100 lbs. in 100 tank car lots is granted, the East Texas Refining Co. will be in an excellent position to take full advantage of water transportation up and down the Mississippi and its tributaries.

If this rate is granted to Fillston, the Shreveport group of refiners also would be entitled to its advantages. It is entirely possible, therefore, that one or more of them might see fit to put in a terminal at that point, or it might be that terminal facilities would be available from the East Texas company on a lease basis. Of course, if Mr. Burford should decide to build the line on to Natchez, it probably would be made available to the other Shreveport refiners, either by passing through that refining center or by means of a short lateral line from the plants to the trunk line.

Another point for consideration is the advantage which the company will have in moving gasoline into the southeast from Fillston, where Mr. Burford reports storage tanks already are being built along with other necessary terminaling facilities. While no rate now applies from Fillston, for comparative purposes the rate from Natchez, Miss. can be considered. That rate to Jackson, Miss., for example ,is 22.5 cents per 100 pounds, as compared with a rate of 33.5 cents per 100 pounds from Longview, Tex. to the same destination. From Natchez to Gulf Port, Miss., the rate is 27 cents, as compared with 40.5 cents from Longview, Tex.

This amounts to a difference of approximately 0.25 cent on gasoline moved to Jackson, and approximately 0.43 cents a gallon on shipments to Gulf port.

The line is expected to have a daily capacity of 15,000 bbls. with one pump station, located at Longview. The East Texas company's plant there has a capacity of 6000 bbls. of gasoline daily, Mr. Burford said. "The East Texas Refining Co.," he added, "is planning to become a heavy buyer of gasoline in the East Texas field." In some quarters that statement was taken as an inference that other East Texas refiners are not parties to the pipeline.

Mr. Burford said that while an adverse decision on the rate application to Fillston probably will mean the eventual building of the line on to Natchez, his company currently is going to feel its way along on the present arrangement. "The 40-mile line," Mr. Burford added, "is to cost approximately $200,000, but if we go on to Natchez, will put in a booster station which will increase the line's capacity to 20,000 bbls. daily and cost an additional $800,000."

Next Exposition in 1938

TULSA, Nov. 7.—The next International Petroleum Exposition will be held in Tulsa, May 14-21, 1938, it is announced by President William G. Skelly. This follows the policy followed for some time of holding a show each two years.

General Manager William B. Way says that reservations for space already approximates about three-fourths of all inside and outside space.

6-Month Nominations Asked

TULSA, Nov. 7.—Texas Railroad Commission will hold its regular monthly statewide proration hearing in Austin, Nov. 19. Oil purchasers have been asked to submit estimate of their requirements over six-months period.

High Fuel Line Temperatures Cut Motor Fuel Economy

By JACK W. WESTSMITH
N. P. N. Staff Writer

LOS ANGELES, Nov. 6

A MATERIALLY higher yield of polymer gasoline can be obtained by mixing paraffins and olefins than by cracking and polymerizing natural gas fractions alone, F. E. Frey, research engineer of the Phillips Co., told members and guests of the California Natural Gasoline Association attending the 11th annual meeting in Los Angeles, Nov. 5

These conclusions were based upon laboratory results which the author supported by numerous equations and tables to illustrate the mechanism and results of the polymerization.

A fairly large unit was felt to be necessary for profitable operation. Dr. J. S. Carey of the M. W. Kellogg Co. was quoted to the effect that a unit of 200 to 300 barrels of polymer gasoline per day capacity would probably pay out in three years or less. This was on the basis of an overall refinery gas yielding five gallons of polymer gasoline per thousand cubic feet and with a price advantage of one to one and a quarter cents above regular grade. This estimate was for a unit charging 2,500,000 cubic feet daily.

Suitable vapors were found in a natural gasoline plant principally in the stabilizer overhead. It was considered that even in fields where the vapors are richest in propanes and butanes, such as Kettleman Hills, the total vapors from an unusually large natural gasoline plant would be required since such vapors, in general, amount to only two to five per cent of the volume of wet gas treated.

The possibility of increasing the amount of propane and butane fractions in the plant vapors was discussed but without arriving at a satisfactory solution.

Taking all of these factors into consideration, it was felt that in California the number of plants to be operated in connection with natural gasoline plants would be few in number because of the large quantities of charge gas required and the limited supply available to any one plant.

A probable development was looked for in the form of a central plant for processing vapors from several plants in a field. It was felt such a plant might be operated on a co-operative or royalty basis, with the return to the contributing plant based on a certain amount over the fuel value of the vapors contributed.

Another paper that merited considerable attention was a discussion by C. C. Moore, Jr. and Robert I. Stirton, both of Union Oil Co., on the "Influence of Automobile Design on the Use of Natural Gasoline."

Need for improved carburation and design of automobiles was declared to be necessary as a means of reducing fuel line temperatures. Data was offered to show that no improvement in fuel line temperatures had been made in the six-year period—1930 to 1936. Maximum gasoline temperatures of the average car at 40 m.p.h. on a level road when the atmospheric temperature was 100 degrees F., ranged at 130 degrees F. in cars of 1930 vintage and older, to 128 degrees F. in 1932, to 145 degrees in 1935 and to 133 degrees in 1936.

These consistently high fuel-line temperatures were attributed to inadequate louvers, reduced frontal areas of opening.

Another factor of primary importance in influencing the tendency of a car to vapor lock was said to be the limiting vapor to liquid ratio of the fuel system. That is, the ratio of the volume of vapor to the volume of liquid which can exist in the fuel supply system without disturbing the delivery of liquid fuel to the carburetor main jet.

"The problem concerned in preventing vapor lock is susceptible of two solutions; either the gasoline may be kept cool in the fuel system so that no vapor handling problem arises, or the gasoline may be allowed to become heated and arrangements made to dispose of the vapor formed," the authors said.

"WHILE much has been done by the automotive engineers along both of these lines of attack in recent years, all their modifications leading toward lower fuel line temperatures have been nullified by the art departments. Consequently, all significant progress which has been made has been in the direction of increasing vapor handling capacity.

"The gasoline vapor formed is disposed of in the most simple available manner; namely by venting to the atmosphere. Consequently, the improvement in vapor locking characteristics of the later cars has been accomplished at the expense of potential economy.

The authors then described an apparatus for approximating the fuel system of a modern car. Four gasolines which had been prepared to meet the "front end" volatility specifications established by the cars on the road in 1933 and 1936, were run through this apparatus with the following results:

Gasoline	Temperature of gasoline in "carburetor bowl" °F.	Loss % by volume
1933 Summer	139	13.7
1936 Summer	139	19.2
1933 Winter	110	11.2
1936 Winter	110	15.0

With respect to these showings the authors said:

"These temperatures and conditions are not far removed from those which may be en-

countered in the automobiles of today, and may be considered to indicate that, if the petroleum industry chose to furnish gasolines as volatile as these cars can handle satisfactorily, the public would only be able to get 80 to 90 cents of its dollar's worth of gasoline into the cylinders.

"Furthermore, the fuel which actually passed the carburetor in such an engine would differ a great deal from the gasoline purchased. It would have lost in large measure the highly volatile "front end" portions which contribute to easy starting, rapid warm-up, decreased detonation, and rapid acceleration."

Consideration of these data was taken to indicate that the customer would suffer appreciable loss in both quality and quantity of gasoline if gasoline producers worked up to the permissible volatility limits. Typical gasolines now being marketed were declared not subjected to more than half the losses shown by the highly volatile gasolines used in the tests.

A considerable increase in "front end" volatility of gasoline by producers was considered possible in light of these considerations. Such an increase was declared acceptable to the motoring public without complaint because of easier starting, more rapid warm-up and increased acceleration.

Since it will be to the economic advantage of the gasoline producer to modify his products in this direction, it was thought possible that there would be a universal trend in this direction, and if the process is a gradual one, the decrease in economy would probably not give rise to any extensive complaint from the public.

The introduction of such fuels to the market will tend to direct the efforts of the automobile designer toward increasing economy by decreasing fuel line temperatures and the combination of these trends will tend to increase the percentage of natural gasoline incorporated in motor fuels over a long-time period, it was concluded.

New Furnaces Offer Operating And Construction Economies

By ALLEN S. JAMES
N. P. N. Staff Writer

SHREVEPORT, La., Nov. 6

CRACKING plant furnace designs which have brought about real economies of construction and efficiency of operation with the past eight years; the development of improved methods of refinery waste disposal and the economies of clay treating were discussed here today at the fourth and last of the regional meetings for plant operators, sponsored by the manufacturing committee of the Western Petroleum Refiners Association.

There were more than 100 registrations, and the spirit with which these plant men from Louisiana, Arkansas, Texas, Oklahoma and Kansas entered into the discussions made the Shreveport meeting an outstanding one, according to several individuals who had attended all four gatherings. So successful have been all of the meetings, incidentally, that plans now are under way to resume them next spring.

With T. B. Leech of the Alcorn Combustion Co., and L. A. Mekler of the Universal Oil Products Co., as the two "furnace men" on the program, the plant operators were given an unusually well rounded picture of both the old and the new in heaters. Mr. Leech's subject was "Radiant Refinery Heaters—Their Design and Application", while Mr. Mekler's subject was "Equiflux Heaters."

As in all of the other meetings, the plant operators at this session wanted to dig into the costs of construction, the cost of operation and the efficiency of these furnaces described by the two speakers. Mr. Leech probably precipitated the discussion along these lines when he stated, in conclusion, that:

"It will thus be seen that there have been developed heaters for topping in which the overall B.t.u. heat input is approximately 15,000 B.t.u.'s per square foot of effective surface; that there have been heaters developed for cracking service which eliminate the possibility of oxidizing due to overheating of individual tubes and which make possible an average B.t.u. input of 12,000 per square foot of radiant surface with all of the tubes being heated at substantially the same rate. It also will be seen that the method of heat application and distribution can be applied to the heating of any refinery feed stock without degradation of that stock unless such degradation is an inherent part of the process. It is further to be noted that such heaters are relatively inexpensive to construct, have low maintenance cost and are easy and economical to operate."

MR. LEECH was asked for a comparison of cost of heaters today with those of eight years ago. He said that the cost today is about 60 per cent of that of 1928 although materials costs are generally unchanged. Asked for further explanation, both Mr. Leech and Mr. Mekler said that whereas formerly a "big square furnace box" was built and the tubes fitted to it, now the design is in direct relation to the number of tubes desired, and the "box is built around those tubes." Mr. Leech added that this economy is due to a reduction as great as 50 per cent in the number of tubes and of headers, and that for this reason even with the use of alloy tubes costing 150 per cent of the former types, the heaters still can be built more economically. And they are, Mr. Leech

declared, some 15 per cent more efficient.

And then one plant operator wanted to know "What about pre-heaters?" Mr. Leech replied that in the Mid-Continent area, meaning more particularly the Texas, Louisiana and Arkansas districts, pre-heaters were not economically good due to the prevailing price for fuel oil. Mr. Mekler then added that, as a general rule, if the flue gas is over 600° F., "don't use pre-heaters until fuel oil is $1.50 a barrel."

Mr. Mekler reviewed the development of various types of heaters as related both to operation and effect on tubes. From these developments have come, he pointed out, the present designs which are doing a far more efficient job, with greater flexibility and with less tube destruction. He described at some length the comparatively new equiflux heater, which in the past two years has been developed commercially in sufficient volume for approximately 400,000 barrels a day of charging stock now to be going through them.

The heater, Mr. Mekler said, was designed for rapid firing. One main advantage is that it permits the splitting of the flow, each of which receives the same thermal flow. The thermal flow, he added, can be either up or down, and the heaters can be operated singly with a single of split flow, or in "cells" of two or more, or in series. One two-cell furnace, Mr. Mekler said, now is cracking a 4 gravity product at 950° F.

One of the latest of these heaters, an upflow type, was described by R. P. Mase of Burrell-Mase Engineering Co., and later shown to plant operators who attended the first meeting at Wichita, Kan., and visited the Barnsdall Refining Co.'s plant there. (See NATIONAL PETROLEUM NEWS, Oct. 7, 1936, page 25.)

Numerous experiences and problems relating to disposal of refinery waste were told by plant men following the presentation of the paper by L. C. Burroughs of Shell Petroleum Corp., on "Disposal of Refinery Wastes." That plant operators generally are viewing with considerable concern the threatened drastic federal legislation to prevent stream pollution was evinced by the interest the men took in the discussions.

ONE operator told Mr. Burroughs that his problem was "clearing up the water" from his separators. He said the water leaves one separator with 1/10th of 1 per cent oil, passes on to another separator, but that the water has about a No. 12 color. Mr. Burroughs suggested skimming the oil and then running the emulsion into a tank for heating and further separation. He also said that sometimes color can be cleared up by making the effluent slightly acidic. In Oklahoma, he added, most of the streams pass through limestone beds and that it was therefore safe to have the effluent slightly acidic.

A Kansas operator said their problem was to reduce the volume of water going into streams. A Texas operator spoke up and said he was concentrating his waste by boiling it down in a steam vat and then running it into a pit.

"Isn't that a costly practice?" another operator asked, "particularly if you are using live steam?"

"Not as costly as it would be if we let that waste go down the streams," was the reply.

Emby Kaye, chairman of the meeting, told of the method in west Texas where the water is returned directly to a water sand deep enough not to contaminate water used by nearby neighbors.

And then an Arkansas refiner told of having been accused, along with a neighboring refiner, of killing all the fish and indirectly causing a plague of mosquitos. He asked the state chemist for a ruling on how much caustic or acid water had to contain in order to kill the fish, and he received a detailed ruling. Now he wanted to know if there has been any thorough study of this problem before he accepts the chemist's report.

Mr. Burroughs said that the A.P.I. committee had been working on that problem quite extensively, and had used all kinds of effluents in stock tanks containing fish, and had eaten hundreds of fish to see what concentration of non-killing effluents would make any changes in the taste of their flesh.

The paper by Paul Swanson of the M. W. Kellogg Co., on "Modern Methods of Clay Treating", also precipitated considerable discussion, particularly with reference to the necessity of treating only for color.

Mr. Swanson presented figures tending to show the economy of clay treating as compared with acid treating, but explained that no one could take those figures and apply them completely to his operation due to the variable factors in each individual refinery.

Swinging the discussion of treating over to inhibitors, one operator told of the discussion at the Fort Worth, Tex., meeting and then intimated that within the next two or three weeks an important decision with reference to gum inhibited gasoline probably would be made by a group of Mid-Continent refiners. It was generally believed by plant operators present that the reference was to the expected decision of a gasoline pipeline company on a request of on or two member companies to tender gum inhibited gasoline.

Slick Interests Merged

TULSA, Nov. 7. — All interests of the Slick-Urschel Oil Co. and affiliated companies have been merged into one, it was announced this week. The largest single unit to be absorbed was Slick, Pryor & Lockhart, Kansas producing firm. The holdings of Ralph J. Pryor and Floyd E. Lockhart, who have managed the operations, were acquired. The two have other holdings outside the Slick partnership and probably will continue their association.

The Mid-Continent Skyline

By Lawrence E. Smith

TULSA, Nov. 7

THERE will be little change in the conduct of state proration because of the Nov. 3 election.

In Texas only one key position was up for action this year, that of the membership held on the Railroad Commission by Chairman Ernest O. Thompson. But that was settled in August when he won overwhelmingly in the run-off primary. Unopposed in the general election, Col. Thompson did not have any campaigning to do.

Oklahoma Corporation Commission's Chairman Reford Bond was up for re-election. He won. The other two members are on for two and four years yet.

No change occurred in the governorship of either Texas or Oklahoma. Gov. James V. Allred, Texas, was re-elected for a two-year term; Gov. Ernest W. Marland, Oklahoma, is midway of a four-year term.

Kansas, however, drew a new governor, Walter A. Huxman, of Hutchinson. He will take office Jan. 1 succeeding Gov. Alf M. Landon. The Kansas Corporation Commission, unlike the commissions of Texas and Oklahoma, is appointed by the governor, subject to Senate confirmation. But the terms of office, starting in 1933 when the commission was created to succeed the old Public Service Commission, were started as 2, 3 and 4-year terms with appointments at the end of each expiring term to be for a 4-year period. Under this arrangement, the original 4-year man comes up for reappointment or retirement in March, 1937. Chairman Homer Hoch was the 3-year man at the outset and he was reappointed last March, hence his term runs to March, 1940. The other member's term runs to March, 1939.

Thus, there appears to be little change in prospect under Gov. Huxman, as he will appoint only one member during his two-year tenure of office. The familiar stratagem of abolishing one commission and creating another so as to change personnel, as was done in 1933, could scarcely be done this time. The new Democratic governor will have a Republican legislature and a Republican lieutenant-governor on his hands. Nor would it be good business to try to change the Kansas commission. It has done a good job of handling proration and the oil interests of the state, which are second in importance to agriculture, apparently are well satisfied and would make a fight to keep the present commission on the job.

Louisiana got its proration set-up change out of the way early in the year.

New Mexico's proration authority is a commission, headed by the governor, with the state land commissioner and the state geologist as the other two. New Mexico's proration rate depends solely upon purchasers' takings, hence the rate of production is easy of determination.

The general policy of proration in these five states, therefore, can be expected to go along about as it has in recent months, with no sudden upsets because of some new official's new ideas on the matter. The only disturbance on the horizon now is the threat of some members of the Texas legislature to work for repeal of the proration law in the session which comes next January.

Crude Oil Condition is Sound

The little price boost in fields of southwest Texas early this week served to emphasize what has been said in these columns repeatedly for several weeks. Demand for crude oil is sound. There is no brisk scrambling and it is not a sellers' market. But no connections are being overlooked by the buyers and unless a new field of considerable size is found soon the early part of 1937 may witness a real bid for wildcatting activity. That invitation is expressed in but one way — a price advance of healthy proportion.

Such new field is not on the horizon. Drilling has been at a high rate all year but new pools with but one or two exceptions are of the run-of-mine variety, important to the few who hold acreage but of no great significance to the industry as a whole. The year will close with a net withdrawal of reserves of all kinds, aboveground storage and underground supply.

IT SHOULD not be "concluded, however, that the day is at hand for abandonment of proration. Potential production if loosed would engulf the market. Furthermore, proration is firmly fixed in the conservation policies of the several principal oil states as a means of preventing physical waste. Its case is thoroughly developed. The efficient rate of withdrawal of oil from a reservoir is a factor that must be considered in counting up the barrels available to the market.

Early in the year there should be quite a brisk tone to

the crude oil market, particularly in Oklahoma and Kansas. Reserves of Texas, Louisiana and New Mexico appear to occupy better ratio to demand than do those of the other two states. The competition is already discernible if one digs under the surface a little.

Two Plants at Gainesville

The pool at Gainesville, Tex., between Ardmore, Okla. and Fort Worth, is the support of two skimming plants recently put into operation. Tydal Refining Co., owned by the McMurrey interests, East Texas producers and refiners, is handling about 1500 barrels daily and marketing the greater part of the output locally. Gainesville Refining Co., owned by local interest, runs about the same amount as the Tydal. Some of the crude is being bought by Cosco Refining Co. (Cosden) and shipped by tank car to the company's plant at Wynnewood, Okla. This plant formerly belonged to the Texas Pacific Coal & Oil Co.

Anderson-Kerr Drilling Co., Oklahoma City, found the pool some months ago. It is shallow —2000 feet deep—and was attractive to operators. But it is on the decline and promises limited supply only to the plants now using the oil.

Texas Commission is Sustained

F. A. Johnson and others were denied temporary injunction against the Railroad Commission of Texas by a three-judge federal court sitting in Dallas, Nov. 4. They had asked the court to keep the state authorities from interfering with shipment of about 100,000 barrels of East Texas oil owned by S. G. Gentry. Plaintiffs sought to sell and move the oil to satisfy a federal tax claim. It is the first time this issue has been heard in federal court. Some weeks back, in another proceeding, a federal tax collector attempted to sell about 500,000 barrels of oil in East Texas. This was oil which the state authorities had refused to clear for shipment on the ground that it had not been produced legally. On that occasion, the attorney general of Texas went into action asserting that the state had prior claim for penalties against the oil. Following a conference in Washington, it was announced that the internal revenue bureau would not interfere with the state's enforcement of its oil regulations.

In the Dallas case, Circuit Judge Hutcheson, presiding, orally expressed the opinion that the case seemed to be an attempt to get around the state's law requiring approval of applications or tenders prior to movement of oil.

This was a denial of application for temporary order. The case, presumably, will be tried out on final hearing on a date not yet named.

Tells How to Find Water Content of Oil Sands

LOS ANGELES, Nov. 6.—A two-day meeting of the Pacific Section of the American Association of Petroleum Geologists, in Los Angeles Nov. 5 and 6, was featured by the presentation of twelve papers on geological problems and developments.

Harry R. Johnson, consulting geologist, was elected president of the section to succeed Chester Cassel. J. C. Kimble, General Petroleum Corp., succeeds Richard G. Reese as secretary-treasurer.

Considerable interest was evidenced in a paper on "Connate Water in Oil Sands" by Howard C. Pyle, Union Oil Co. Methods used for determining the fluid content of sands were described. The author said in part: "Addition of dextrose (corn sugar) to water used in drilling shows how much drill water is absorbed by the core sample, and by subtracting the amount of water indicated by the quantity of sugar present, we find how much connate, or native water is present in the oil sand.

"It is important to know how much water is there, because the space not occupied by water is filled by oil and gas, and so we are able to estimate how much oil is in the formation and how fast it will come out."

Results of tests on cores from a Los Angeles Basin well were said to indicate that approximately 38 per cent of the pore space of oil sands which produce clean oil and gas is occupied by connate water. Probable reasons for the occurrence of this water and the importance of its presence were discussed.

A scheduled presentation by Ralph D. Reed, national president of the A.A.P.G., on "Eocene Paleogeography in Southern California" was not given because of illness of the author. However, this discussion, which was to have been published in book form, will be presented in the December issue of the association's Buletin.

In a paper on "The Geology of San Nicolas Island, California", Luis E. Kemnitzer, pointed out that this island is the southeast end of an eroded and faulted anticline, with the anticlinal axis about one mile landward, along the southwest shore, trending northwest.

"Geoelectric Exploration in the Tejon Ranch Area, California" was discussed by J. J. Jakosky and H. K. Armstrong. The area discussed in this paper lies within the southern part of the San Joaquin Valley.

Francis D. Bode discussed "The Geology of the Eastern Half of the San Joaquin Hills, Orange County, California." The "Geological Causes of Poor Reflection Records" was discussed by Frank Rieber. Among the other papers given at this meeting were: "The Sycamore Canyon Formation" by Max L. Krueger; "Relation of the Type Santa Margarita to the Type Monterey, California", by J. Edmund Eaton; "Geology of the Outfall Sewer Tunnel, Palos Verde Hills", J. R. Schultz; "The Stratigraphy of the Tesla Quadrangle near Tracy, California" by Arthur S. Huey; and "Geological Prospecting in New Guinea", by W. E. Heater.

Plans are being made for the national meeting of the A. A. P. G. to be held in Los Angeles in March, 1937.

Text of Second Conspiracy Indictment By Federal Grand Jury

IN THE District Court of the United States for the Western District of Wisconsin: United States of America, Western District of Wisconsin, ss.

Indictment

The grand jurors of the United States of America, at a regular term of the District Court of the United States of America for the Western District of Wisconsin, to wit: The Madison, December 1935, term thereof, held at Madison, in the County of Dane, in said Western District of Wisconsin, after being duly impaneled, sworn, and charged at the term of court aforesaid, inquiring for the said district, upon their oaths find and present, as follows:

Count 1

A. The Defendants

1. The following named corporations engaged principally in the petroleum business are hereby made defendants herein. Each of said corporations is duly authorized to do business under and by virtue of the laws of the state of incorporation as indicated. Each may be described as an integrated company, i.e., a company which is engaged in the combined functions of production, transportation, and refining of crude petroleum, and the transportation and wholesale and retail marketing of the products thereof, principally gasoline. Each is also sometimes known as either a "major" or "semi-major" company, as distinguished from "independent" or smaller company. Each will sometimes be referred to herein, for convenience, by the abbreviated name as indicated. Said corporations, and those of their subsidiaries hereinafter named as defendants, will sometimes be referred to as "defendant major oil companies":

Name of Corporation	Abbreviated Name	State of Incorporation	Principal Place of Business
Socony-Vacuum Oil Co., Inc.	Socony-Vacuum	New York	New York, N. Y.
Standard Oil Co. (Indiana)	Standard of Indiana	Indiana	Chicago, Ill.
Cities Service Co.	Cities Service	Delaware	New York, N. Y.
Continental Oil Co.	Continental	Delaware	Ponca City, Okla.
Gulf Refining Co.	Gulf	Delaware	Pittsburgh, Pa.
The Pure Oil Co.	Pure	Ohio	Chicago, Ill.
Shell Petroleum Corp.	Shell	Virginia	St. Louis, Mo.
Sinclair Refining Co.	Sinclair	Maine	New York, N. Y.
The Texas Co.	Texas	Delaware	New York, N. Y.
Tide Water Oil Co.	Tide Water	New Jersey	New York, N. Y.
Mid-Continent Petroleum Corp.	Mid-Continent	Delaware	Tulsa, Okla.
Phillips Petroleum Co.	Phillips	Delaware	Bartlesville, Okla.
The Ohio Oil Co.	Ohio Oil	Ohio	Findlay, Ohio
Skelly Oil Co.	Skelly	Delaware	Tulsa, Okla.
Barnsdall Refining Corp.	Barnsdall	Delaware	Tulsa, Okla.
The Globe Oil & Refining Co.	Globe	Oklahoma	Blackwell, Okla.
The Globe Oil & Refining Co.	Globe	Illinois	Lemont, Ill.
The Globe Oil & Refining Co.	Globe	Kansas	McPherson, Kan.
National Refining Co.	National	Ohio	Cleveland, Ohio
Deep Rock Oil Corp.	Deep Rock	Delaware	Tulsa, Okla.

2. The following named corporations, subsidiaries of the respective defendant parent companies as indicated, similarly engaged in the petroleum business, are hereby made defendants herein, their respective abbreviated names, states of incorporation, and principal places of business being as indicated:

Name of Subsidiary	Abbreviated Name	Parent Company	State of Incorporation	Principal Place of Business
Empire Oil & Refining Co.	Empire	Cities Service	Delaware	Bartlesville, Okla.
Cities Service Oil Co.	Cities Service Oil	Cities Service	Delaware	Tulsa, Okla.
Marathon Oil Co.	Marathon	Ohio Oil	West Virginia	Tulsa, Okla.
Wadhams Oil Co.	Wadhams	Socony-Vacuum	Wisconsin	Milwaukee, Wis.

3. The following individuals are hereby made defendants herein each having the address and being (or having been) associated with the company and having (or having had) the official title or position therewith, as indicated. Said individual defendants have, during the period covered by this indictment, been actively engaged in the management, direction, and control of the affairs and policies of the respective defendant major oil companies, particularly those affairs and policies of said companies covered by this indictment: (See page 24h—Editor.)

B. General nature of the business and the interstate commerce involved.

4. The states of Michigan, Wisconsin (including the western district thereof), Minnesota, North Dakota, South Dakota, Iowa, Illinois, Indiana, Missouri, and Kansas compose one of the great marketing areas for gasoline in the United States. Said area comprises the gasoline marketing territory of defendant Standard of Indiana, and is sometimes known as the "Standard of Indiana territory" by reason of said defendant's dominant position in the distribution of gasoline in each of said states. Said area is sometimes also known as the Mid-Western area and will be so referred to herein. Each of defendant major oil companies, either directly or through subsidiary of affiliated companies, markets gasoline in some or all of the states comprising said Mid-Western area.

5. Gasoline distributed in said Mid-Western area is manufactured largely from crude petroleum produced in the states of Texas, Oklahoma, Kansas, Arkansas, and Louisiana. Large quantities of the crude petroleum produced in these states are transported in interstate commerce, principally by pipe lines, from the states of production to refineries located in the aforesaid Mid-Western area, principally in the states of Illinois, Indiana, and Missouri. Gasoline refined from such crude is further transported in substantial quantities in interstate commerce from the states in which refined to other states in said Mid-Western area. Refineries are also located outside the said Mid-Western area, and substantial quantities of gasoline manufactured outside the said Mid-Western area are transported in interstate commerce, principally by tank car, into each of the states in the aforesaid Mid-Western area. Defendant major oil companies throughout the period covered by this indictment have together controlled, manufactured, shipped and sold, largely in interstate commerce, more than 85% (now approximately 4,500,000,000 gallons) of all gasoline distributed yearly in said Mid-Western area.

6. Each of said defendant major oil companies throughout the period covered by this indictment has distributed and marketed gasoline in said Mid-Western area in the manner following, that is to say: Each has owned or leased, and has operated or controlled the operation of, large numbers of retail service stations through which

Name of Individual	Address	Official Title or Position	Company With Which Associated
Charles E. Arnott	New York, N. Y.	Vice-President (formerly president)	Socony-Vacuum
Charles L. Jones	New York, N. Y.	Vice-President in charge of Domestic Trade Department	Socony-Vacuum
H. T. Ashton	St. Louis, Mo.	General Manager, Lubrite Division	Socony-Vacuum
A. G. Maguire	Milwaukee, Wis.	Chairman of Board of Directors	Wadhams
L. L. Marcell	Kansas City, Mo.	General Manager, White Eagle Division	Socony-Vacuum
R. R. Irwin	Kansas City, Mo.	Assistant General Manager, White Eagle Division	Socony-Vacuum
Bryan S. Reid	Chicago, Ill.	General Manager, Chicago Division	Socony-Vacuum
Howard A. Coffin	Detroit, Mich.	General Manager, White Star Division	Socony-Vacuum
Allan Jackson	Chicago, Ill.	Vice-President in charge of Sales	Standard of Indiana
Amos Ball	Chicago, Ill.	General Sales Manager	Standard of Indiana
Hiram A. Lewis	Chicago, Ill.	Assistant General Sales Manager	Standard of Indiana
Harry D. Frueauff	Tulsa, Okla.	Vice-President	Empire
O. J. Tuttle	Tulsa, Okla.	Tank Car Sales Manager	Empire
W. H. Merritt	Tulsa, Okla.	Vice-President & General Manager	Cities Service Oil
Dan Moran	Ponca City, Okla.	President	Continental
Harry J. Kennedy	Ponca City, Okla.	Vice-President in charge of Marketing	Continental
L. T. Cramer	Ponca City, Okla.	Tank Car Buyer	Continental
Edward Karstedt	Denver, Colo.	Formerly Vice-President	Continental
William V. Hartman	Pittsburgh, Pa.	Vice-President	Gulf
Henry M. Dawes	Chicago, Ill.	President	Pure
C. B. Watson	Chicago, Ill.	Vice-President	Pure
G. C. Morris	Chicago, Ill.	Sales Manager	Pure
R. H. McElroy, Jr.	Chicago, Ill.	Tank Car Sales Manager	Pure
R. G. A. Van der Woude	New York, N. Y.	President	Shell Union Oil Corp. (parent company of Shell)
Alexander Fraser	St. Louis, Mo.	Formerly President	Shell
L. Van Eeghen	(unknown)	President	Shell
		Formerly Vice-President in charge of Marketing	Shell
R. D. Ebbert	St. Louis, Mo.	Manager, Tank Car Sales	Shell
P. E. Lakin	St. Louis, Mo.	General Manager of Sales	Shell
J. W. Carnes	New York, N. Y.	Vice-President	Sinclair
W. S. S. Rogers	New York, N. Y.	President	Texas
H. W. Dodge	New York, N. Y.	Vice-President in charge of Sales	Texas
S. B. Wright	Chicago, Ill.	Territorial Manager	Texas
Edward L. Shea	New York, N. Y.	President	Tide Water
J. W. Warner	Tulsa, Okla.	(unknown)	Tide Water
Jacob France	Baltimore, Md.	President and General Manager	Mid-Continent
Robert W. McDowell	Tulsa, Okla.	Vice-President in charge of Sales	Mid-Continent
Frank Phillips	Bartlesville, Okla.	President	Phillips
A. M. Hughes	Bartlesville, Okla.	Sales Manager	Phillips
H. A. Garnder	Bartlesville, Okla.	Tank Car Sales Manager	Phillips
C. L. Fleming	Findlay, Ohio	Vice-President in charge of Refining & Marketing	Ohio Oil
N. T. Stover	Findlay, Ohio	General Sales Manager	Ohio Oil
L. B. McCammon	Tulsa, Okla.	General Sales Manager	Marathon
Edward B. Reeser	Tulsa, Okla.	President	Barnsdall
W. G. Skelly	Tulsa Okla.	President	Skelly
W. T. Atkins	Kansas City, Mo.	Vice-President in charge of Marketing	Skelly
I. A. O'Shaughnessy	Minneapolis, Minn.	President	Globe

gasoline is sold directly to consumers. Each has usually delivered gasoline to such retail service stations by tank truck or tank wagon from its bulk storage plants conveniently located to supply the retail stations in the various local marketing areas, said bulk storage plants being supplied with gasoline by tank cars principally from the refineries of the respective defendant major oil companies. Each has also sold and distributed large quantities of gasoline from the same or similar bulk storage plants to numerous independent retailers or dealers owning or operating retail service stations, said gasoline being usually sold to such independent dealers under supply contracts.

In addition to selling through company owned or controlled retail service stations, and to independent dealers, each of said defendant major oil companies, with the exception of defendant Standard of Indiana, has sold gasoline in large quantities in tank car lots to jobbers.

7. Jobbers usually own and operate bulk storage plants conveniently located so as to serve, by their tank trucks or tank wagons, retail service stations either owned or operated by them, or independently owned or operated, in the various retail marketing areas served by them. Approximately 50% of all gasoline distributed to retail service stations in said Mid-Western area is distributed by or through jobbers. There are in excess of 4000 jobbers of gasoline doing business in the states comprising the aforesaid Mid-Western area. Great numbers of said jobers have been engaged in the distribution of gasoline during the period covered by this indictment and for many years prior thereto and their investments in capital assets have been and are substantial.

8. Jobbers marketing gasoline in the Mid-Western area are, and during the period covered by this indictment and many years prior thereto have been, supplied with gasoline for the most part by defendant major oil companies, except Standard of Indiana. By means of intensive advertising campaigns defendant major oil companies have created a public acceptance of, and demand for, their gasoline which is sold under their respective brand designations. Most jobbers have been persuaded, or induced, to enter into contracts for the purchase of their supplies from said defendant major oil companies, and during the period covered by this indictment in excess of 80% of all gasoline purchased by such jobbers have been purchased from said defendant major oil companies, gasoline sold by each of said defendant major oil companies to such jobbers is sold and transported largely in interstate commerce, delivery being made from the states in which the refineries are located to the states in which the various jobbers are located, principally in tank cars as aforesaid.

9. Said defendant major oil companies do not sell any substantial part of their gasoline to jobbers in spot transactions. Nearly all gasoline sold

by them to jobbers in the Mid-Western area is, and has been throughout the period covered by this indictment, and prior thereto, sold under long term supply contracts. By far the greater part (not less than 90%) of all gasoline so sold under contract by said defendant major oil companies to jobbers is so-called "regular" or "house-brand" gasoline, having at the present time an octane (or anti-knock) rating of 68-70, the remainder of said gasoline being either so-called "third grade" gasoline, having an octane rating of less than 65, or "premium" gasoline, having an octane rating of 76 or above.

10. Prior to the conspiracy hereinafter alleged, said defendant major oil companies (or their predecessors) were in active competition with each other with respect to the several terms and provisions of such jobber supply contracts, and jobber accounts were solicited and contracts negotiated and renewed by them in the course, and on the basis, of such competition. Such jobber supply contracts have for many years last past usually provided for the guarantee by the supplying company of a minimum margin to the jobber, i.e., a minimum differential between the retail price at which the purchased gasoline would normally be sold and the tank car price paid by the jobber. Such guarantee provisions have, prior to the conspiracy hereinafter alleged, been especially the subject of active competition among the supplying companies. From time to time, and particularly since in or about September, 1934, to the date of the presentation of this indictment, by reason of the narrow spread existing between the normal retail prices and the basic tank car prices to the jobbers provided for in said jobber supply contracts, the amounts of gross margins enjoyed by the jobbers have usually been determined by the amounts of the said guarantees.

C. The conspiracy.

11. Beginning as early as the year 1931, the exact date being to the grand jurors unknown, and continuing to the date of the presentation of this indictment, defendants and certain persons hereinafter referred to, and others to the grand jurors unknown, well knowing all the foregoing facts, have been engaged in said Mid-Western area, and particularly in the western district of Wisconsin, in a wrongful and unlawful combination and conspiracy in restraint of the aforesaid interstate trade and commerce in gasoline in violation of Section 1 of the Act of Congress of July 2, 1890, known as the Sherman Anti-Trust Act, that is to say:

12. Defendant major oil companies, acting through the individual defendants herein and others of their respective officers and agents hereinafter referred to, and others to the grand jurors unknown, have been continuously engaged during and throughout the period of time aforesaid, from early in the year 1931 to the date of the presentation of this indictment, in an unlawful combination and conspiracy to regulate, and to fix and make uniform, the amounts of guaranteed margins to be allowed to jobbers in the sale of gasoline in interstate commerce, as aforesaid, under the aforementioned jobber supply contracts. Pursuant to said continuing combination and conspiracy, defendants, by concerted action, have regulated, and from time to time have fixed and made uniform, and have restricted and narrowed said guaranteed margins. In so doing defendants have unlawfully eliminated, restricted, and suppressed competition among themselves in the solicitation of jobber accounts and in the sale of gasoline to jobbers in interstate commerce, and have unlawfully regulated and restricted the ability of said jobbers to compete with them and each of them, and with each other, in the sale of gasoline to retail dealers or directly to consumers.

13. Said combination and conspiracy has been effectuated by the means and in the manner following: Commencing in 1931 numerous private meetings have been held by representatives of defendant major oil companies at which, among other things, the subject of jobber guaranteed margins in the aforesaid Mid-Western area has been discussed and debated for the purpose and with the effect of arriving at agreements and understandings whereby the same were arbitrarily fixed and made uniform. Such meetings have been held at frequent intervals in each of the years 1931 to 1936 inclusive, usually at Chicago, Illinois at the Blackstone Hotel, the exact number and times and places of holding all of said meetings being to the grand jurors unknown. Said meetings have usually been attended by the following persons, and other representatives and employes of defendant major oil companies to the grand jurors unknown, each representing and acting for his company or its affiliated companies: Each of the individuals named as defendants herein, and C. B. McCullough, W. H. Ware, and R. D. Mering, representing Socony-Vacuum; R. A. Raupaugh, representing Standard of Indiana; P. M. Miskell (now deceased), representing Cities Service, Empire and Cities Service Oil; George J. Woods, representing Continental; R. R. Johnston and G. R. Nutty (now deceased), representing Gulf; J. G. Sinclair and Frank E. McSweeney, representing Shell; Adolph H. Sus and Ferrin McMahon, representing Sinclair; D. S. Wixson and Walter J. Herr, representing Mid-Continent; H. A. Trower, N. S. Moon, E. M. Kelly and John A. Getgood, representing Phillips; H. B. Carpenter, representing Ohio Oil; Joseph F Adams, representing Barnsdall; C. S. Smith, representing National; Bernard L. Majewski, representing Deep Rock; C. W. Mackay, representing Marathon; and Martin G. Peeters, representing Wadhams.

14. Each of said individuals, including each of said individual defendants, has attended one or more of said meetings and has participated actively in the discussions and agreements and understandings arrived at therein. Defendant Charles E. Arnott has usually called and has usually acted as chairman of said meetings. At said meetings the amounts of guaranteed margins to be allowed to jobbers in said Mid-Western area were agreed upon, fixed and made uniform, and arbitrarily changed from time to time by agreements, understandings, and concerted action, and have thereby been continuously regulated by defendants during the period of time aforesaid.

15. In or about December, 1934, by agreement made and concerted action taken pursuant to and in the course of said continuing combination and conspiracy, said guaranteed margins to be allowed to jobbers in said Mid-Western area were uniformly fixed at 5.50c below the prevailing normal retail prices, subject to the reduction therefrom of one-half of the amount by which at any time the differential between the basic tank car price to the jobber (as uniformly defined in said jobber supply contracts), and the normal retail price, might be less than 5.50c. Said agreement has from time to time been renewed and reaffirmed at similar meetings held by defendants throughout the year 1935 and in the year 1936, and has continued in effect down to the date of the presentation of this indictment.

D. Jurisdiction and venue.

16. The combination and conspiracy herein set forth has operated and has been carried out in part within the Western District of Wisconsin. During and throughout the period covered by this indictment defendant major oil companies (with the exception of Gulf) have marketed, either directly, or indirectly through affiliated or subsidiary companies, large quantities of gasoline in interstate commerce within said district in competition with jobbers whose margins have been fixed and reduced by agreement and concerted action and whose ability to compete with said defendant major oil companies has been restricted, as aforesaid. Said defendant major oil companies (with the further exception of Standard of Indiana) have sold and delivered to jobbers large quantities of gasoline within said district in interstate commerce. Said defendant major oil companies selling to jobbers throughout the period of time aforesaid have, pursuant to said combination and conspiracy, substantially restrained competition among themselves within said district in soliciting jobber accounts, in contracting with jobbers, and in allowing guaranteed margins to jobbers, and have refrained, within said district, from competing freely with each other in respect thereto. Said defendant major oil companies selling to jobbers in effectuating and carrying out said combination and conspiracy, have from time to time within said district solicited jobbers by offering them the uniform, arbitrary, and non-competitive guaranteed margins agreed upon and established by concerted action, have contracted with such jobbers on the basis of said uniform guaranteed margins, and have sold and delivered in interstate commerce large quantities of gasoline to such jobbers on the basis of said uniform guaranteed margins.

And so the grand jurors aforesaid, upon their oaths aforesaid, to find and present that defendants, throughout the period aforesaid, at the places, and in the manner and form aforesaid, unlawfully have engaged in a continuing combination and conspiracy in restraint of the aforesaid trade and commerce among the several states; contrary to the form of the statute in such

case made and provided, and against the peace and dignity of the United States of America.

Count II

17. Paragraphs 1 to 9, inclusive, of Count I of this indictment are hereby realleged and incorporated herein as if hereinafter set forth in full.

18. Prior to the conspiracy hereinafter alleged, said defendant major oil companies (or their predecessors) were in active competition with each other with respect to the several terms and provisions of such jobber supply contract, and jobber accounts were solicited and contracts negotiated and renewed by them in the course, and on the basis, of such competition.

C. The conspiracy.

19. Beginning as early as the year 1931, the exact date being to the grand jurors unknown, and continuing to the date of the presentation of this indictment, defendants and certain persons hereinafter referred to, and others to the grand jurors unknown, well knowing all the foregoing facts, have been engaged in said Mid-Western area, and particularly in the Western District of Wisconsin, in a wrongful and unlawful combination and conspiracy in restraint of the aforesaid interstate trade and commerce in gasoline in violation of Section 1 of the Act of Congress of July 2, 1890 known as the Sherman Anti-Trust Act, that is to say:

20. Defendant major oil companies, acting through the individual defendants herein and others of their respective officers and agents hereinafter referred to, and others to the grand jurors unknown, have been continuously engaged during and throughout the period of time aforesaid, from early in the year 1931 to the date of the presentation of this indictment, in an unlawful combination and conspiracy to regulate, and to fix and make uniform, the essential terms and provisions of the aforementioned jobber supply contracts. Pursuant to said continuing combination and conspiracy, defendants, by concerted action, have regulated, and from time to time have fixed and made uniform, the terms and conditions under which gasoline has been sold to jobbers under contract, as aforesaid, in interstate commerce. In so doing defendants have unlawfully eliminated, restricted, and suppressed competition among themselves in the solicitation of jobber accounts and in the sale of gasoline to jobbers in interstate commerce, and have unlawfully regulated and restricted the ability of said jobbers to compete with them and each of them, and with each other, in the sale of gasoline to retail dealers or directly to consumers.

21. Said combination and conspiracy has been effectuated by the means and in the manner following: Commencing in 1931 numerous private meetings have been held by representatives of defendant major oil companies at which the terms and provisions of jobber supply contracts have been discussed and debated for the purpose and with the effect of arriving at agreements and understandings whereby the same were arbitrarily determined upon and made uniform. Such meetings have been held at frequent intervals in each of the years 1931 to 1936 inclusive, usually at Chicago, Illinois at the Blackstone Hotel, the exact number and times and places of holding all of said meetings being to the grand jurors unknown. Said meetings have usually been attended by the following persons, and other representatives and employes of defendant major oil companies to the grand jurors unknown, each representing and acting for his company or its affiliated companies: Each of the individuals named as defendants herein, and C. B. McCollough, W. H. Ware, and R. D. Mering, representing Socony-Vacuum; R. A. Raupaugh, representing Standard of Indiana; P. M. Miskell (now deceased), representing Cities Service, Empire and Cities Service Oil; George J. Woods, representing Continental; R. R. Johnston and G. R. Nutty (now deceased), representing Gulf; J. G. Sinclair and Frank E. McSweeney, representing Shell; Adolph H. Sus and Ferrin McMahon, representing Sinclair; D. S. Wixson, and Walter J. Herr, representing Mid-Continent; H. A. Trower, N. S. Moon, E. M. Kelly and John A. Getgood, representing Phillips; H. B. Carpenter, representing Ohio Oil; Joseph F. Adams, representing Barnsdall; C. S. Smith, representing National; Bernard L. Majewski, representing Deep Rock; C. W. Mackay, representing Marathon; and Martin G. Peeters, representing Wadhams.

22. Each of said individuals, including each of said individual defendants, has attended one or more of said meetings and has participated actively in the discussions had and agreements and understandings arrived at therein. Defendant Charles E. Arnott has usually called and has usually acted as chairman of said meetings. At said meetings the essential terms and provisions of said jobber supply contracts were agreed upon and made uniform, and arbitrarily changed from time to time by agreements, understandings and concerted action, and have thereby been continuously regulated by defendants during the period of time aforesaid.

23. Thus, in addition to the agreements and concerted action with respect to jobber guaranteed margins as set forth in Count I hereof, defendants during the period of time aforesaid have from time to time unlawfully agreed upon and adopted by concerted action the following:

A. Uniform provisions in said jobber contracts limiting the length of time of such jobber contracts to one year, subject to automatic renewal unless cancelled before a specified period (likewise agreed upon and made uniform) prior to the expiration date.

B. Uniform provisions for determining the basic price to the jobbers, usually that such basic price should be the average spot market price, determined by averaging the high and low spot market prices for gasoline of comparable octane rating published by PLATT'S OILGRAM, for the Tulsa, Oklahoma market, and by the Chicago Journal of Commerce on the date of shipment.

C. Uniform provisions to the effect that all gasoline should be sold only on the basis of all-rail delivered prices, f.o.b. Tulsa, Oklahoma, irrespective of the actual origin of the gasoline or method of its transportation.

D. Uniform provisions fixing minimum prices to jobbers.

E. Uniform provisions to the effect that the guaranteed margins allowed to jobbers should automatically and uniformly change in accordance with changes in discounts allowed to dealers.

F. Uniform provisions for the minimum and maximum monthly and annual gasoline requirements of the jobber.

G. Prohibitions against the inclusion in said jobber contracts of any guarantee of protection to the jobber against local price cuts (it being usually agreed and understood that such so-called local protection might be given only voluntarily by the refiner in the latter's discretion and apart from the contract with the jobber).

D. Jurisdiction and venue.

24. The combination and conspiracy herein set forth has operated and has been carried out in part within the Western District of Wisconsin. During and throughout the period covered by this indictment defendant major oil companies (with the exception of Gulf) have marketed either directly, or indirectly through affiliated or subsidiary companies, large quantities of gasoline in interstate commerce within said district in competition with jobbers, the essential provisions and terms of whose contracts with defendant major oil companies have been determined and made uniform by agreement and concerted action, and whose ability to compete with said defendant major oil companies has been restrained and restricted, as aforesaid. Said defendant major oil companies (with the further exception of Standard of Indiana) have sold and delivered to jobbers large quantities of gasoline within said district in interstate commerce. Said defendant major oil companies selling to jobbers throughout the period of time aforesaid have, pursuant to said combination and conspiracy, substantially restrained competition among themselves within said district in soliciting jobber accounts and in contracting with jobbers, and have refrained, within said district, from competing freely with each other in respect thereto. Said defendant major oil companies, in effectuating and carrying out said combination and conspiracy, have from time to time within said district solicited jobbers by offering them the uniform, arbitrary, and non-competitive contracts, the essential terms and provisions of which have been agreed upon and established by concerted action, have contracted with such jobbers on the basis of said uniform contract, and have sold and delivered in interstate commerce large quantities of gasoline to such jobbers pursuant to said uniform contract.

And so the grand jurors aforesaid, upon their oaths aforesaid, do find and present that defendants, throughout the period aforesaid, at the places, and in the manner and form aforesaid, unlawfully have engaged in a continuing combination and conspiracy in re-

straint of the aforesaid trade and commerce among the several states; contrary to the form of the statute in such case made and provided, and against the peace and dignity of the United States of America.

Count III

25. Paragraphs 1 to 9, inclusive, of Count I of this indictment are hereby realleged and incorporated herein as if hereinafter set forth in full.

26. Prior to the conspiracy hereinafter alleged, said defendant major oil companies (or their predecessors) were in active competition with each other in their dealings with jobbers and jobber accounts were solicited and contracts with jobbers were negotiated and renewed by them in the course, and on the basis, of such competition.

C. The conspiracy.

27. Beginning as early as the year 1931, the exact date being to the grand jurors unknown, and continuing to the date of the presentation of this indictment, defendants and certain persons hereinafter referred to, and others to the grand jurors unknown, well knowing all the foregoing facts, have been engaged in said Mid-Western area, and particularly in the Western District of Wisconsin, in a wrongful and unlawful combination and conspiracy in restraint of the aforesaid interstate trade and commerce in gasoline in violation of Section 1 of the Act of Congress of July 2, 1890 known as the Sherman Anti-Trust Act, that is to say:

28. Defendant major oil companies, acting through the individual defendants herein and others of their respective officers and agents hereinafter referred to, and others to the grand jurors unknown, have been continuously engaged during and throughout the period of time aforesaid, from early in the year 1931 to the date of the presentation of this indictment, in an unlawful combination and conspiracy to regulate and make uniform their practices and policies with respect to jobbers. Pursuant to said continuing combination and conspiracy, defendants, by concerted action, have from time to time adopted uniform and arbitrary rules and policies in their dealings and practices with or affecting jobbers in the sale of gasoline to said jobbers in interstate commerce. In so doing defendants have unlawfully eliminated, restricted, and suppressed competition among themselves in their practices and policies affecting jobbers, in their dealings with jobbers, in the solicitation of jobber accounts, and in the sale of gasoline to jobbers in interstate commerce, and have unlawfully regulated and restricted the ability of said jobbers to compete with them and each of them, and with each other, in the sale of gasoline to retail dealers or directly to consumer.

29. Said combination and conspiracy has been effectuated by the means and in the manner following: Commencing in 1931 numerous private meetings have been held by representatives of defendant major oil companies at which the practices and policies of said companies affecting jobbers have been discussed and debated for the purpose and with the effect of arriving at agreements and understandings whereby the same were arbitrarily determined upon and made uniform. Such meetings have been held at frequent intervals in each of the years 1931 to 1936 inclusive, usually at Chicago, Illinois at the Blackstone Hotel, the exact number and times and places of holding all of said meetings being to the grand jurors unknown. Said meetings have usually been attended by the following persons, and other representatives and employes of defendant major oil companies to the grand jurors unknown, each representing and acting for his company or its affiliated companies: Each of the individuals named as defendants herein, and C. B. McCollough, W. H. Ware and R. D. Mering, representing Socony-Vacuum; R. A. Raupaugh, representing Standard of Indiana; P. M. Miskell (now deceased), representing Cities Service, Empire, and Cities Service Oil; George J. Woods, representing Continental; R. R. Johnston and G. R. Nutty (now deceased), representing Gulf; J. G. Sinclair and Frank E. McSweeney, representing Shell; Adolph H. Sus and Ferrin McMahon, representing Sinclair; D. S. Wixson and Walter J. Herr, representing Mid-Continent; H. A. Trower, N. S. Moon, E. M. Kelly and John G. Getgood, representing Phillips; H. B. Carpenter, representing Ohio Oil; Joseph F. Adams, representing Barnsdall; C. S. Smith, representing National; Bernard L. Majewski, representing Deep Rock; C. W. Mackay, representing Marathon; and Martin G. Peeters, representing Wadhams.

30. Each of said individuals, including said individual defendants, has attended one or more of said meetings and has participated actively in the discussions had and agreements and understandings arrived at therein. Defendant Charles E. Arnott has usually called and has usually acted as chairman of said meetings. At said meetings important practices and policies affecting jobbers were concertedly adopted and made uniform, and were arbitrarily changed from time to time by agreements, understandings and concerted action, and have thereby been continuously regulated by defendants during the period of time aforesaid.

31. Thus, in addition to the agreements and concerted action with respect to jobber guaranteed margins as set forth in Count I hereof, and the other essential provisions of jobber contracts as set forth in Count II hereof (and largely in order to support and reenforce said agreements and understandings set forth in said counts), defendants during the period of time aforesaid have from time to time unlawfully entered into and carried out agreements and understandings as follows:

A. To refrain from taking on new jobber accounts, or from taking on new jobber accounts under contracts providing for guaranteed margins.

B. To refrain from converting jobber accounts handling unbranded gasoline to jobber accounts handling branded gasoline, unless guaranteed margins were not allowed.

C. To refrain from converting retail dealers or groups of retail dealers to a jobber basis.

D. To refrain from converting any jobbers to commission agents.

E. To refrain from converting any jobbers to dealers.

F. To refrain from converting jobber accounts handling branded gasoline to jobber accounts handling unbranded gasoline, unless the accounts thus converted were "ethical," that is to say, unless the jobbers involved maintained the refiners' retail prices.

G. To refrain from selling to jobbers handling unbranded gasoline, unless such jobbers were "ethical" as aforesaid.

H. To refrain from leasing facilities from jobbers previously under contract with competitors and from employing such jobbers as commission agents.

I. To refrain from soliciting jobber accounts in areas where the refiner had marketing facilities of its own.

J. To refrain from accepting new jobber accounts in so-called depressed price areas.

K. To refrain from selling gasoline to so-called "out price" jobbers, i.e., jobbers who failed to maintain refiners' prices.

L. To require each jobber to deal exclusively with one refiner.

M. To require each jobber to refrain from soliciting dealers of other defendant major oil companies.

N. Limiting the amounts of local protection, i.e. protection against depressed retail prices, which might be given to a jobber.

O. To refrain from giving any local protection on third grade gasoline.

32. Further to support and reinforce the aforementioned agreements and understandings affecting jobbers, defendants have throughout the period conspired to fix and make uniform commissions allowed company agents selling gasoline on commission basis in competition with jobbers.

D. Jurisdiction and Venue.

33. The combination and conspiracy herein set forth has operated and has been carried out in part within the western district of Wisconsin. During and throughout the period covered by this indictment defendant major oil companies (with the exception of Gulf) have marketed either directly, or indirectly through affiliated or subsidiary companies, large quantities of gasoline in interstate commerce within said district in competition with jobbers, the practices and policies of defendant major oil companies with respect to whom have been determined and made uniform by agreement and concerted action and whose ability to compete with said defendant major oil companies has been restrained and restricted, as aforesaid. Said defendant major oil companies (with the further exception of Standard of Indiana) have sold and delivered to jobbers large quantities of gasoline within said district in interstate commerce. Said defendant major oil companies selling to jobbers, throughout the period of time aforesaid have, pursuant to said combination and conspiracy, substantially restrained competition among themselves within said district in their practices and policies affecting jobbers, in their dealings with jobbers, in the solicitation of jobber accounts and in contracting with jobbers, and have refrained, within said district, from competing freely with each other in re-

spect thereto. Said defendant major oil companies in effectuating and carrying out said combination and conspiracy have employed said uniform and arbitrary rules and practices in their dealings with jobbers and prospective jobbers within said district, and have sold and delivered in interstate commerce large quantities of gasoline to jobbers within said district on the basis of said uniform and arbitrary rules and practices.

And so the grand jurors aforesaid, upon their oaths aforesaid, do find and present that defendants, throughout the period aforesaid, at the places, and in the manner and form aforesaid, unlawfully have engaged in a continuing combination and conspiracy in restraint of the aforesaid trade and commerce among the several states; contrary to the form of the statute in such case made and provided, and against the peace and dignity of the United States of America.

John Henry Lewin,
Hammond E. Chaffetz
W. B. Watson Snyder,
Grant W. Kelleher,
Special Assistants to the Atty. General.
John Dickinson,
Assistant Attorney General.
John J. Boyle,
United States Attorney.

United States of America,
Western District of Wisconsin, ss:

I. H. C. Hale, Clerk of the United States District Court in and for the Western District of Wisconsin, do hereby certify that the annexed and foregoing is a true and full copy of the original indictment returned November 6, 1936, in the case of United States, V. Socony-Vacuum Oil Company, Inc., et al., No. 11342, now remaining among the records of the said court in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the seal of the aforesaid court at

..... this..... day of.....
A. D. 1936.

Seal) .....
Clerk.

Retailers Call Upon Roosevelt To State Policy on Co-ops.

MILWAUKEE, Wis., Nov. 9 THE administration at Washington was called upon to make known to the gasoline retailers of the country its policies with regard to the oil indictments at Madison, Wis., to market stabilization and to co-operatives, in a resolution adopted recently by the ways and means committee of the National Association of Petroleum Retailers.

The committee stated that a campaign speech by President Roosevelt in which he endorsed the co-operative movement required an immediate statement of the policy of the administration upon this subject. It also said it could not reconcile the "Roman Spectacle" at Madison with a desire to further recovery, or to aid business and employment. The resolution in full reads:

"WHEREAS: The National Association of Petroleum Retailers has given its full support to the current administration of the federal government in the efforts made to establish commercial, agricultural and industrial recovery for the welfare of the nation; and

"WHEREAS: The National Association of Petroleum Retailers has taken issue with the said administration upon all subjects in which it believed the administration to be in error as was the right and duty of the said association, pointing out to the administration the reasons upon which the position of the association was based and requesting full and impartial consideration; and

"WHEREAS: The administration has seen fit to prosecute a number of important companies and personages of the petroleum industry in connection with an alleged conspiracy to purchase excessive gasoline production and prevent it entering the market as such, which has been shown by this association to have been for the benefit of the small units of the industry and thus contrary to the establishment of a monopoly, as charged in the indictments, without any evident consideration other than procrastinating promises for future interviews; and

"WHEREAS: The administration has seen fit to openly advocate the establishment of co-operatives to steal the business of those in the retail branch of the industry through their ability to pay dividends because they are exempt from certain taxes which the retail branch of the industry must pay and pay in increasing amounts as co-operatives spread and the number of retailers grows less; which advocation has been shown in the sending of a commission to Europe to study co-operatives, by an address of the president at Minneapolis and by a movie now current and called the 'President's Mystery;' which advocation has stirred up an increasing resentment; now therefore be it

"RESOLVED: That the said association calls upon the administration to answer honestly upon the issues affecting this association and the petroleum industry without evasion or procrastination; specifically upon the future intentions with regard to the oil indictments; market stabilization and co-operatives so that the membership of this association, numbering in excess of 50,000 small-business men, and their families and employes and their families and the millions of customer friends and their families shall be able to judge these issues fairly and for themselves; and be it further

"RESOLVED: That this association is fully appreciative of the consideration given the small business men in the past, of the recovery that has been achieved under the present administration, of the sounder condition of our banking and finances, of all the measures that have been devised and passed and placed into execution, considering that the Constitution has not been endangered thereby and recalling that it has been necessary from time to time to amend and revise portions of the Constitution which did not meet changed conditions, but that this association cannot reconcile the Roman Spectacle at Madison or the promotion of tax-free co-operatives with a desire to further the recovery or to aid business and employment."

Oklahoma Retailers Out For Members

OKLAHOMA CITY, Okla., Nov. 9. — A state-wide drive to enlarge the membership of the recently organized Petroleum Retailers Association of Oklahoma has recently been announced by the group's manager, Charles H. Biggs.

The organization, formed to prevent price wars and to maintain a fair margin of profit between tank wagon and retail service stations, was granted a charter Oct. 9 and now has over 200 members. The current membership drive is expected to add several hundred new members, according to Biggs.

The officers are retailers. W. L. Clements is president; C. E. Bretz, secretary; and Noah Richmond, treasurer.

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6. — Type 34 Female Swivel
4. — Check Valve for Type 151 Nozzle
7. — Type 36 Swivel
3. — Type 151-114 Adapter and Nozzle
8. — Type 114 Elbow (90°)
10. — Type 114 Adapter Nozzles
9. — Type 114 Elbow (70°)
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AN IMMEDIATE JOINT PROBLEM

By **ARCH L. FOSTER**
N. P. N. Staff Writer

LUBRICATION of, and lubricants for, hypoid rear axles and engine bearings are the two greatest technical problems facing the automotive and refining industries today. Progress in these fields has been so rapid that it is difficult for engineers and chemists of the two industries to keep always in the forefront of developments.

To know what types of lubricants are demanded for safe and efficient operation of these gears and bearings and to know how to produce these lubricants are both imperative for the refining technologist. Without this knowledge he cannot hope to supply the needed products, or to compete in the markets for the business which the use of the modern type of automotive equipment demands.

In the two articles presented here, the findings of the automotive industry technologists regarding the difficulties of the problems, the requirements to be met, the compromises which must be made between conflicting requirements and lubricant properties, are set forth in a concise manner which will help to clarify the oil industry's understanding of the automotive engineer's position.

H. C. Mougey, qualified by long experience in these problems and one of the foremost of the technologists in their development, shows how connecting-rod bearings have been changed to meet the increasingly severe conditions imposed by the new engines. He shows nine requirements of a good bearing, all of which must be either met or compromises worked out, to eliminate the problems of fatigue, scuffing, corrosion, and other difficulties.

He shows that the refiner must make oils giving less corrosive action on new bearing alloys and that the automotive engineer must reduce crankcase temperatures to reduce oxidation of lubricants and use alloys less subject to corrosion, while at the same time using bearings which withstand the higher pressure and temperature conditions. He also shows details of a new laboratory test method developed to test bearings and oils for their efficiencies under conditions comparable to service.

H. R. Wolf, also well known to technologists in the automotive and refining fields, summarizes in a concise manner the requirements for extreme pressure lubricants; he shows why unit tooth pressures are so extreme, and the qualities necessary in a satisfactory lubricant for hypoid gears.

Load-carrying capacity is the quality of greatest importance, he stated. Stability, the retention of the lubricant's original properties to the maximum practicable degree, is the next important requirement. Wear must be reduced to a minimum practicable with efficient operation. The lubricant must not channel, foam, or corrode bearing metals to a degree which will shorten too much the bearing life, or interfere with continuous, efficient operation.

The Newer Bearing Materials And Their Lubrication

By **H. O. MOUGEY***

Presented before the American Petroleum Institute, Division of Refining, Chicago, Nov. 12

RECENT developments in new bearing metals for connecting rods in the latest types of automotive engines have brought to the fore serious problems of corrosion, fatigue, and other troubles which co-operative work between the oil and automotive industries is required to solve satisfactorily. This co-operative investigation is progressing rapidly.

Until three or four years ago, little change had been made in the essential composition or characteristics of the babbit type bearing metal first patented 97 years ago. High temperatures and high rubbing speeds in connecting-rod and similar bearings have made it desirable to employ better bearings for these purposes.

This article, which includes all of the paper presented at Chicago except the historical introductory discussion, summarizes the various requirements of modern bearing metals, the shortcomings of the metals now being studied, and a test method, using regular connecting rods in a setting which approaches normal service conditions, to study bearings and lubricants in conjunction.—Editor.

THERE is certainly a very wide range of materials and percentages of these materials in this list of bearings (See Table 1) and, consequently, it may be desirable to raise the question: "What is a bearing?"

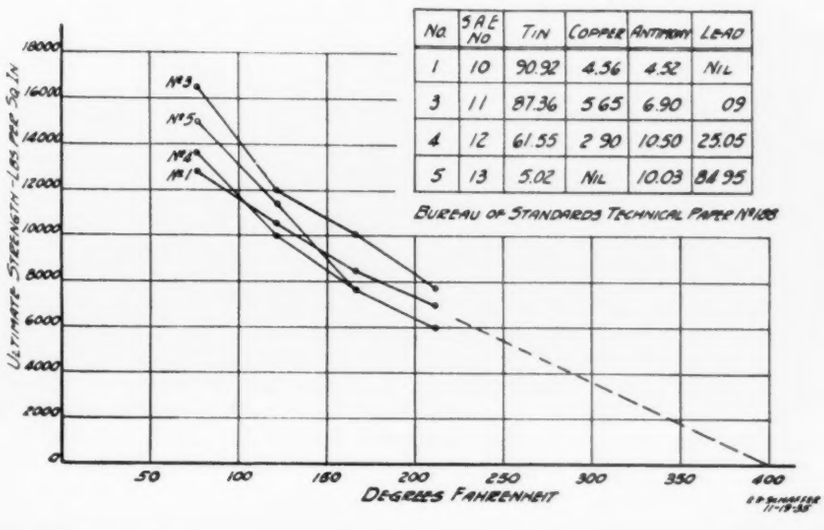
There are two theories that have been advanced to explain bearings. According to one theory[1] a bearing must be a combination of hard crystals in a matrix of softer material; the hard crystals are supposed to carry the load, and the softer matrix is supposed to permit deformation of the bearing so as to permit a more nearly uniform distribution of pressure.

It is our belief that the "hard crystal and soft matrix" theory is incorrect, and that this theory has very greatly retarded the development of bearings. It is true that certain soft metals, such as lead, tin, cadmium, etc., although good in anti-friction and anti-scoring properties, are low in mechanical strength, and an increase in mechanical strength may be obtained either by bonding these materials in thin layers to stronger materials or by combining them with certain materials to give a fine mechanical mixture of soft metal and hard crystals. However, it is the resulting combination of properties, and not the hard and soft crystal method of obtaining these properties, that is important.

According to the second theory the crystal structure is of little or no importance, but the bearing must have a combination of properties so that it will resist the forces to which it may be subjected in service. These properties are tabulated in Table 2.

The particular combination of properties required by a bearing depends upon the

Fig. 1. Curves showing the rapid rate of loss of mechanical strength of tin-base and lead-base babbitts at elevated temperatures, in bearings



*General Motors Research Laboratories, Detroit, Mich.

TABLE 2

Bearing Properties

1. Mechanical strength
2. Bonding characteristics
3. Melting point
4. Fatigue resistance
5. Anti-friction characteristics
6. Non-scoring characteristics
7. Conformability
8. Embeddability
9. Corrosion resistance

TABLE 1
Some Bearings and Their Composition

Bronzes (or High Copper Alloys)

	Copper	Lead	Tin
1870—Dick	80	10	10
1892—Dudley	77	15	8
1900—Clamer and Hendrickson	(73)	*20	†7

1904—Clamer (Patent No. 769,337). A stiff back with a lining of high melting point. (This is the original steel-back copper-lead bearing.)

*Minimum. †Maximum.

High Lead Alloys

1905—"No Heet" ..... Lead 96–99.5, Sodium 4–0.5

1915—Ulco metal, Frary metal, Mathesius, Lurgi, Lagermetall, Bahumetal, Satco, etc. (lead hardened with alkali and alkali-earth metals).

Cadmium Alloys

1909—Touceda, Patent No. 934,637..... Cadmium 95–99.5, Magnesium 5–0.5

1933—Schwartz and Phillips, Patent No. 1,904,175..... Cadmium 93–99.75, Nickel 7–9.25

1935—Smart, British Pat. No. 436,633.... Cadmium 97.0–98.0, Copper or Nickel 0.25–0.50, Silver 1.75–2.50

SAE Babbitts (Typical Compositions)
(Adopted 1922)

SAE No.	Tin	Lead	Copper	Antim'y
10	90.0	†0.35	4.5	4.5
11	87.0	†0.35	5.75	6.75
12	59.50	26.00	3.0	10.50
13	5.0	84.0	†0.50	10.0
14	10.0	74.0	†0.50	15.0

†Maximum.

Special Compositions

Graphite bearing metal, oilless bearings, porous bearings, Graphalloy, Genelite, Durex, Oilite, etc. (porous bearings, high in copper, and containing small amounts of such materials as tin, lead, graphite, etc. These bearings are usually impregnated with oil before use).

forces to which the bearing is subjected. Leaded bronze, of the composition copper 88, tin 4, lead 4, and zinc 4, is excellent for the bearing for the small end of an automobile connecting rod; and steel-backed, high-tin-base babbitt bearings are in general use for the large ends of connecting rods—but very unsatisfactory results would be obtained if these bearings were reversed, and the leaded bronze of the above composition used for the big end and the babbitt for the small end.

A cake of paraffin is excellent in properties 5, 6, 7, 8, and 9 in the table of "bearing properties," but it would make a poor connecting-rod bearing on account of being very poor in properties 1, 2, 3, and 4.

H. C. Mougey, chief chemist, General Motors Corp., Detroit, a speaker on the subject of the new bearing materials used in automobiles today and their lubrication, at the refining group session Nov. 12 of the American Petroleum Institute meeting at Chicago

Under certain conditions other properties or combinations of properties may be important. Canvas impregnated with bakelite is coming into general use for certain very severe bearing conditions, such as some of the bearings in steel mills; but this material is unsatisfactory for automobile connecting-rod bearings for high-speed operation, because the heat generated at the bearing surface cannot be dissipated rapidly enough, and the rubbing surface of the bearing soon chars.

In general, a bearing metal need not have all of the properties in Table 2; it requires only the ones that will enable it to resist the forces to which it will be subjected in service. Tin-base babbitt (SAE 11) is in general use in large-end connecting-rod bearings; but SAE 11 is very low in mechanical strength, in melting point, and in fatigue resistance.

However, it is excellent in its bonding characteristics, and the combination of a steel back bonded to a very thin lining of SAE 11 produces a bearing which is much superior to a straight SAE 11 bearing in mechanical strength and fatigue resistance. The anti-friction characteristics of a steelback babbitt-lined bearing are so good that the temperature rise due to friction may be low enough so that the low melting point of the SAE 11 is not fatal. Such a bearing is good in non-scoring characteristics, in conformability, in embeddability, and in corrosion resistance.

However, most tin-base and lead-base babbitts tend to lose their strength very rapidly at elevated temperatures.[2] This tendency is shown by the curves in Fig. 1. In modern automobile engines this loss in strength, due to higher crankcase temperatures, is so serious that many attempts are being made to replace SAE 11 with other materials. In the case of connecting rods for airplane engines, SAE 11 is already practically obsolete, and other bearing materials that have higher strength at elevated temperatures are in general use.

Lead and cadmium have higher melting points than tin; and, although these metals do not offer as much increase in strength at elevated temperatures as might be desired, they may have enough advantage over tin—especially in borderline cases— to make all the difference between success and failure. High-lead-base bearings and cadmium bearings are coming into general use for such types of service as connecting rods for diesel engines.

In trying to replace SAE 11 it is very easy to get a material that will be superior in one or two respects, such as mechanical strength or high melting point; but such a bearing may be lacking in other important respects, such as corrosion resistance or anti-friction characteristics or non-scoring characteristics. When used in crankcases with corrosive oils or with oils that become corrosive due to oxidation of the oils, certain high-lead or cadmium bearings may fail very rapidly due to corrosion.

Attention has previously been called to the fact that the alloy —copper 88, tin 4, lead 4, and zinc 4,—is unsuitable for large-end connecting-rod bearings in automobile engines. This is because it will cause scoring of the crankshaft under high-speed op-

erating conditions, although it will not score the shaft under sufficiently low-speed operating conditions. It is due to the low rubbing speed at the small end of the connecting rod that this alloy can be used for a piston-pin bearing.

Scoring

This problem of non-scoring is one of the most important in developing connecting-rod bearings; but, unfortunately, we have very little reliable information as to why certain metals score and others do not. In discussing this general problem Tomlinson[3] says:

"It is not easy to obtain any direct experimental evidence that molecular cohesion takes place, although strong molecular forces would be expected when the boundaries of two solids are brought together within the range of the molecular fields. That molecular cohesion occurs when two clean solids touch seems to be certain. Sir W. Hardy has expressed the opinion that the static friction between clean surfaces is due to cohesion."

Bowden and Ridler[4] have reported in the *Proceedings of the Royal Society* on some work that they did to determine the temperatures of the surface layers of bodies during sliding. The surface temperature was measured by using the rubbing contact of two different metals as a thermocouple, and determining the electromotive force generated on sliding. Experiments showed that the local temperature—which depended upon load, speed, coefficient of friction, and thermal conductivity—might be surprisingly high, reaching more than 1000 deg. C. (1832 deg. F.) in some cases.

With lower-melting-point metals, the melting point of the metal was the maximum temperature that could be reached. In tests on lubricated surfaces they obtained similar results. For example, a polished metal surface, well lubricated with "Castrol XL," and running smoothly with a low coefficient of friction, showed a surface temperature of over 600 deg. C. (1112 deg. F.). This high temperature was localized at the sliding surface, the mass of the metal was at room temperature, and there was no evident sign of heating.

Joint research committee of the American Society for Testing Materials and the American Society of Mechanical Engineers has been working on the "Effect of Temperature on the Properties of Metals." In this work the seizure of metals at elevated temperatures has been studied. The following sentences are taken from a condensed report of this committee.[5]

"One of the causes of failure of metals at high temperature is seizure, the incipient welding together of two metal surfaces in contact . . . While perfectly matching surfaces will weld readily, in order to bring surfaces of ordinary smoothness of finish into molecular contact it is usually necessary that one surface at least be fairly plastic and be pressed against the other so as to force them into molecular contact. In many such cases plasticity is brought about by elevated temperature, so that the seizure problem is quite generally a high-temperature prob-

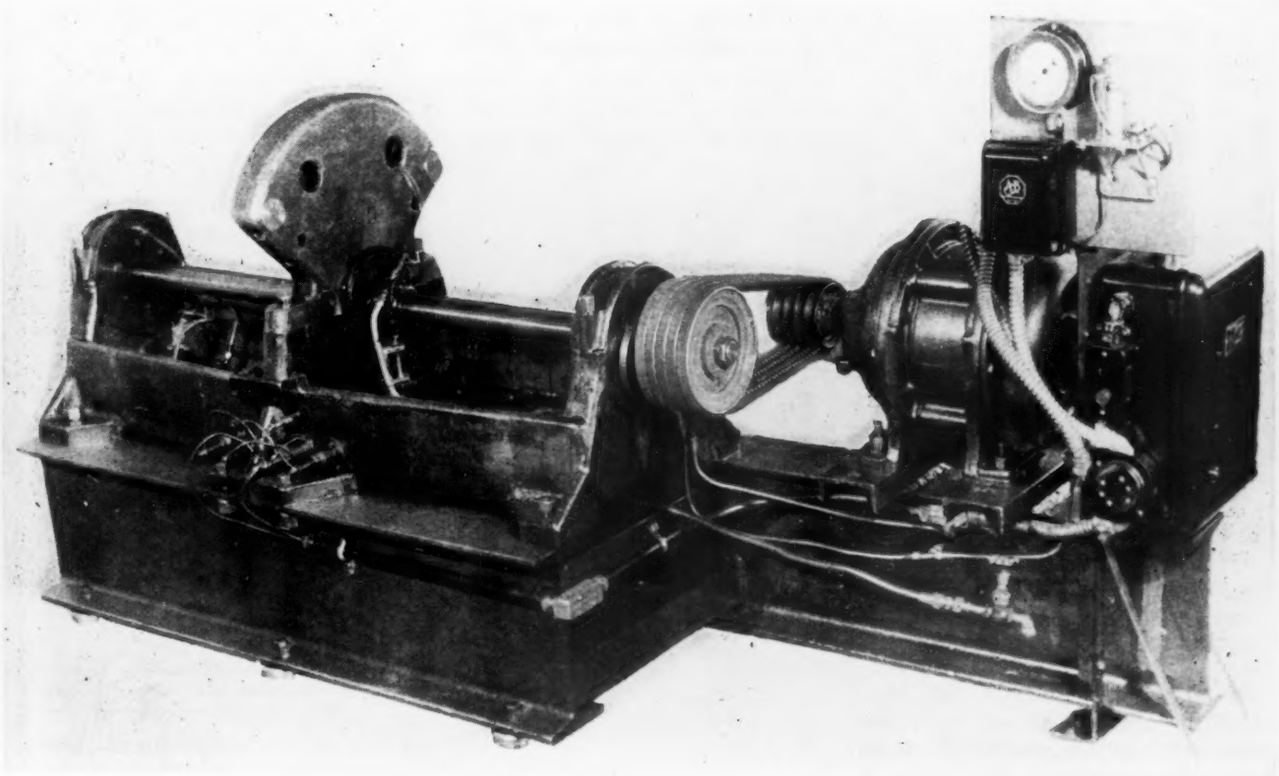


Fig. 2. Machine used in General Motors Laboratory for testing bearing metals installed in connecting rods. This machine and test procedure are described in this article

lem . . . Unless they are soluble in the solid metal at the temperature in question, oxide and other non-metallic films prevent metallic contact of the coating surfaces, and may thus prevent seizure. A film of oil, or even of adsorbed gas, will likewise prevent contact."

The findings of this committee are in accord with the results of work at the National Bureau of Standards,[6] in which it was found that, under certain conditions of load and rubbing speed, with steels of certain properties, metal-to-metal contact would occur, and that seizing, welding, and very rapid wear would occur. However, if the test conditions were modified somewhat, adherent oxide films would form on the surfaces of the steel; and, under exactly the same conditions of load and rubbing speed, these oxide films would prevent metal-to-metal contact; and, as a result, there would be no signs of seizing or welding, and the rate of wear would be extremely low.

IN THE report of the joint ASTM-ASME committee[5] descriptions are given of various testing machines which are used to determine the non-scoring characteristics of metals, but experience indicates that it is difficult to obtain check results with such machines unless all the test conditions are very carefully standardized; and it is difficult to correlate the results of such machines with performance in service. For this reason a test in an engine under actual service conditions is the only true test of non-scoring; and, since the requirements in different engines may be different, a bearing that scores in one engine may be non-scoring in another engine of slightly different design or operated under different conditions.

Of course, under true "fluid-film" lubrication conditions, there is a film of oil between the metal surfaces—and scoring is prevented by this film of oil, and the composition of the bearing metals is of no importance. However, when this fluid film breaks down, then it appears to be necessary that the bearing metals must be separated by a film of some kind to prevent molecular contact with resulting scoring or welding. In the case of "extreme-pressure" lubricants, lubricants, which are attracting so much attention at the present time on account of their importance for the lubrication of hypoid gears, the film which prevents scoring is iron sulfide or iron chloride or some similar material. In the case of tin, lead, or cadmium bearings as used in connecting rods in automobile engines, it appears that a film of some kind must be formed so easily with all oils that scoring is not a problem with these bearing materials.

Under non-corrosive conditions, failures of these types of bearing materials are due to "fatigue," and the quality of the lubricating oil usually has little or nothing to do with failures of these bearings. Of course, it may happen that under some conditions the lubricating system of an engine cannot keep the bearings supplied with oil due to the oil being too high or too low in viscosity, or due to the oil being too far below its pour point—and in such cases the bearings may fail due to lack of oil of any kind, regardless of the quality of the oil.

Fatigue Resistance

Since with clean oil and in the absence of corrosion or scoring troubles, bearings fail by lack of resistance to fatigue, and since resistance to fatigue in an engine cannot be determined by the conventional tension, compression, or impact tests, and since the quality of the oil usually has little or nothing to do with resistance to fatigue, it is very important in developing bearings to be able to measure resistance to fatigue. This can be done by operating the bearings in an engine under very high-speed, high-temperature, and high-load conditions. This actual engine test must always be made as the final test before drawing definite conclusions as to resistance to fatigue. However, under these severe conditions, other parts of an automobile engine are also subject to failure, and it is not a simple matter to make fatigue tests in engines. Consequently, for preliminary work, a laboratory testing machine is desirable.

The loading on connecting rods is quite different from the loading on bearings used for line shafts, etc. In the case of a connecting-rod bearing the load travels around the inside of the bearing; and, on account of the lightness of the connecting rods, a certain amount of deflection of the bearings usually occurs. In our laboratory we use a bearing testing machine like the one shown in Fig. 3 and Fig. 4. The eccentric weights (A-A) tend to

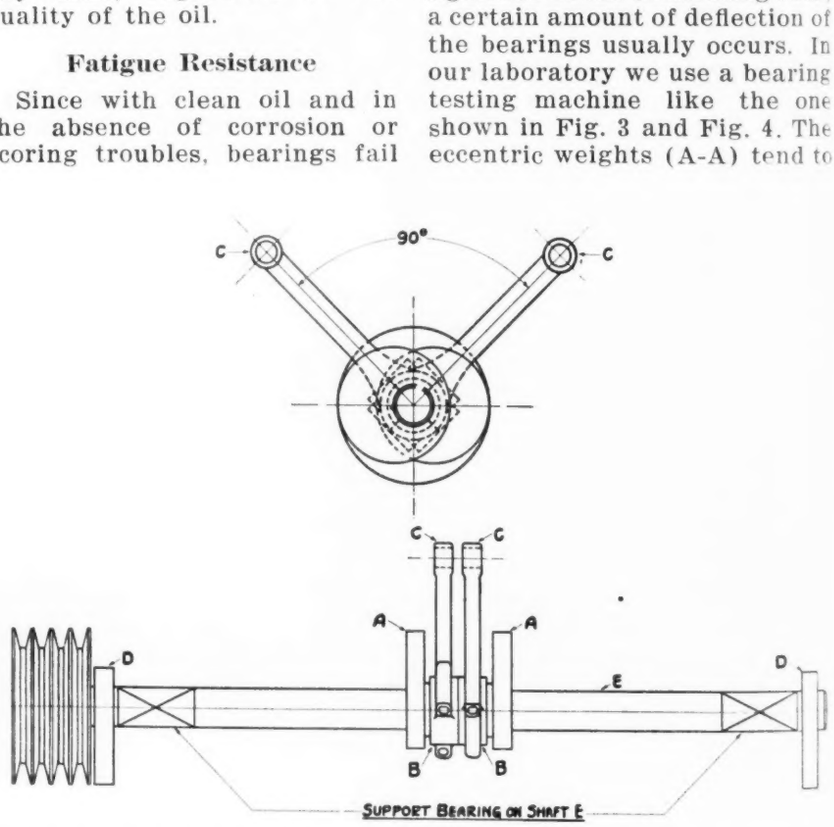


Fig. 3. Drawing illustrating the assembly details of the bearing testing machine shown in Fig. 2

make the shaft "bow out," thus putting a rotating load on the inside of the connecting-rod bearings (B-B). The connecting rods are spaced at an angle of 90-deg., and are held with piston pins at the small ends (C-C). The eccentric weights (D-D) are for the purpose of counterbalancing the weights (A-A), so that the testing machine as a whole does not vibrate. Oil is fed to the bearings under test by holes in the shaft (E), so that the bearings are lubricated just as they would be in an engine.

The temperature of the oil is controlled by electric heaters immersed in the sump. The temperature of the bearings is determined by thermocouples embedded just beneath the surface of the babbitt, and the temperature of the oil in the sump is controlled so as to maintain the bearings at the predetermined temperature. In our work this bearing temperature is usually 174 C.-176 C. (345-349 F.) The temperature of the oil in the sump is usually between 135 C. (275 F.) and 149 C. (300 F.) since the difference in temperature between the oil in the sump and the bearing depends upon such factors as load, speed, bearing clearance, oil viscosity, coefficient of friction of the bearing, etc.

The test machine is usually operated at a speed of 4500 r.p.m., with the eccentric weights adjusted to give a calculated bearing load of 1400 lb. per square inch operated area. If the bearings are not resistant to corrosion, the test must be made with an oil that will not develop corrosive acids on oxidation under the test conditions. If it is desired to test the performance of the bearings with corrosive oils, then either 1 per cent of oleic acid is added to the lubricating oil, or corrosive acids are allowed to form as the result of oxidation of the oil in the test machine. In our tests we have standardized on SAE 30 oil, although we do not find any measurable difference in bearing life in engines over the range of viscosities of from 10-W to SAE 40, provided the lubricating system in the engine can keep the bearings supplied with oil under all conditions.

By means of this machine it is possible to compare the fatigue resistance of different bearing materials, making the tests in the actual connecting rods in which the bearing material is to be used. Since the details of construction of the rod and of the bearing greatly affect the resistance to fatigue, an inferior bearing material in a well-designed rod may be superior to a better bearing material in an inferior rod. For this reason it is impossible to give definite figures as to the relative merits of different bearing materials, and each engineer tries to get the best all around results in his own engine.

Conformability, Embeddability, Corrosion Resistance

Conformability is the property of a bearing that permits it to deflect or distort enough to give a more uniform distribution of pressure. This result may be accomplished by design of the bearing or by composition of the bearing alloy, or both. The cap of an automobile connecting rod is subject to much higher calculated loads than the part of the bearing in the main part of the rod; but, due to the fact that the cap is usually sufficiently flexible to permit a more uniform distribution of the load, the life of the cap half of the bearing is usually much greater than that of the rod half of the bearing.

C. L. Henderson, vice president Vickers Petroleum Co., Wichita, Kans., presiding officer at the refining group session Nov. 12 of the American Petroleum Institute convention at Chicago

Embeddability is the property of the bearing that permits the embedding of small particles of dirt in the bearing, thus decreasing the abrasive action of these small particles. Examination of a used babbitt bearing will usually show many small particles of iron, or other hard materials; but these have been embedded in the bearing to such an extent that they no longer tend to cause abrasion.

Corrosion resistance is a property that may be very important. Ordinary mineral oil, regardless of the crude or method of refining, is usually very low in acidity or corrosive tendencies. However, under certain conditions, as the result of oxidation—especially at elevated temperatures — organic acids that probably are quite similar to oleic acid may be formed. Lubricating oils differ greatly in their tendency to form acids by oxidation under high-temperature conditions. All crudes contain varying amounts of inhibitors that decrease the tendency of oils to oxidize, but these inhibitors may be removed from the oil to a greater or less extent by the various refining methods. As a result, a year or so ago, many of the more highly refined lubricating oils were subject to oxidation at high crankcase - oil temperatures, with the resulting development of acids that would corrode certain bearing materials such as cadmium or some of the high-lead materials. This subject is getting to be better understood by oil chemists and, as a result, many oil companies are now in production on lubricating oils that, although very highly refined, are very resistant to the development of corrosive acids.

It is evident that there are three solutions to the problem of corrosion of bearings. These solutions are:

1. Develop oils that will not form corrosive acids, even under severe operating conditions.
2. Decrease the crankcase temperatures to such an extent that all oils will be free from oxidation.
3. Use bearings that are not

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subject to corrosion, even with acid oils.

CONCLUSION

From the standpoint of the bearings, much progress is being made. The high-tin babbitts, SAE 10, 11, and 12, and the high-lead babbitts, SAE 13 and 14, are not subject to corrosion in engines. Cadmium bearings, of present composition, are subject to corrosion, as are also certain of the high-lead babbitts such as those hardened with alkali and alkaline-earth metals. Copper-lead bearings are a sponge of copper holding practically pure lead in the pores of the copper sponge. Corrosive acids remove the lead from the surface of such a bearing, leaving a bearing surface of copper but without the increase in clearance that would result from the corrosion of cadmium or high-lead bearings.

Under present conditions it is easy for an automobile company to change in production from one bearing material to another. Consequently, bearing materials now in production may not be the same as those that will be used six months from now. Probably all the bearing materials now in use will continue to be used, wherever they are found to be suitable, and the probabilities are that the list of bearing materials will be increased as a result of a better knowledge of the entire bearing problem.

This problem of lubricants for the newer bearing materials, which at first appeared to be rather serious, is now being handled in a very satisfactory manner. The oil and automotive engineers have cooperated on this problem; the oil engineers have made improvements in their lubricants, and the automotive engineers have done what they could from the standpoint of the engine and the bearings.

TABLE 3

Problems Solved by Cooperation Between the Petroleum and Automotive Industries

1. Crankcase dilution
2. Crankcase corrosion
3. Gum and anti-knock
4. Vapor lock
5. Cold starting
6. Lubricants for the new bearing materials.

From time to time in the past, situations have arisen which at first appeared to be very serious. However, as the result of cooperation between the oil and automotive engineers, these problems have been solved. The list of these problems includes such subjects as those shown in Table 3.

In the early days, crankcase dilution and crankcase corrosion were very serious problems, but improvements in gasoline and the use of crankcase ventilators and jacket-water temperature control solved the problem. When gasoline of improved anti-knock properties were first made, considerable trouble due to gum was experienced. However, both the oil and automotive engineers made the necessary changes, and this problem of gum is now of minor importance. Vapor-lock difficulties have not entirely disappeared, but the control of vapor pressure of the fuel and improved fuel-handling systems have resulted in this trouble being under control. Several years ago cold starting was very serious, but more suitable lubricants, together with improvements in starting systems, have corrected this situation.

In a similar manner, as a result of the cooperation between the two industries, the problem of lubricants for the newer bearing materials is no longer a serious problem. It appears that by a continuation of this cooperation these problems may be kept under control, and other problems which may arise in the future may be solved.

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Increasingly Powerful E.P. Lubricants Required in Automotive Rear Axles

By H. R. WOLF*

An Abstract of the First Portion. Followed by the Actual Text of the Remainder of the Paper, "The Lubrication Requirements of Automotive Rear Axles," Presented Before the American Petroleum Institute's Refining Division, Nov. 12, Chicago.

THE recent widespread adoption of hypoid and highly stressed spiral bevel rear axle gears has created a marketing and distribution problem for the powerful type of extreme-pressure lubricant. Although this type of lubricant is not new, its commercial use has been somewhat limited and such lubricants have not been generally available through the usual retail marketing outlets. Their necessity has not been fully appreciated.

Failures in rear axle gears[7] in service are due to tooth breakage[1,3], surface pitting, and scoring or scuffing. The first two conditions are caused by failure of the gear material in fatigue and have not been shown to be related to, or influenced by, lubrication.

Scoring or scuffing of the tooth profile surfaces is caused by actual welding of small areas along the tooth contact lines, under the high local surface temperature conditions which result from high unit pressure and high rubbing velocity.

*General Motors Corp., Research Laboratories Section, Detroit.

Gear Tooth Loads

The maximum stress on the gear tooth surfaces may reach values as high as 350,000 to 400,000 pounds per square inch and the rubbing or sliding velocities may range from 0 to 1800 feet per minute or higher. Fortunately, the highest unit stress occurs under low gear, high torque conditions when the rubbing or sliding velocity is low and does not generally result in scoring.

The stress on a gear tooth is sometimes erroneously pictured as being applied over a large portion of the tooth profile area. Actually, assuming three teeth are making contact, the entire driving torque is transmitted through three line contacts. As the gears rotate, the instantaneous line contacts traverse or sweep the tooth profile surfaces. The conventional tooth contact diagrams, such as shown in Fig. 2, are merely a summation of the individual momentary line contacts occurring during a complete meshing cycle.

The fallacy of attempting to specify the load or tooth pressure in pounds per lineal inch of tooth width is clearly shown by actual instantaneous tooth contact lines also.

Scoring on the "drive" side of the gear teeth usually occurs in high gear speeds slightly under the top speed of the car. Scoring on the "coast" side generally occurs under conditions of extremely high unit pressures caused by suddenly "dropping-in" the clutch while coasting at intermediate or high car speeds.

A study of the scoring action of a number of production rear axle gear sets in service has very conclusively demonstrated that the factor "PV" (maximum tooth pressure multiplied by rubbing velocity) is an accurate index of the tendency of a gear set to score.

Table 1[2] gives the condition of the gear teeth when operated in service on a straight mineral gear lubricant, and the "PV"

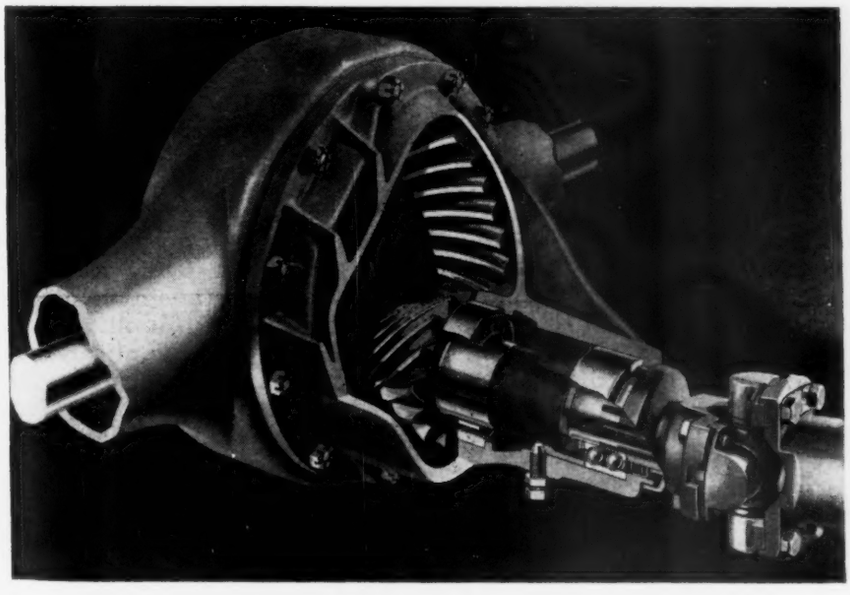

Fig. 1. The hypoid rear axle of the 1937 LaSalle V-8 and Cadillac. This cutaway shows how the driving gear has been lowered from the center of the conventional axle design. Tooth wear is increased because of increased rubbing velocity as a result of an additional longitudinal sliding action, lengthwise of the tooth

values for a number of production passenger car and bus spiral bevel rear axles. These data indicate that the tendency to score is in direct ratio to the "PV" value and that mineral oil is unsatisfactory as a gear lubricant when the value of "PV" exceeds approximately 1,500,000 for this material.

Oiliness addition agents will increase to a slight degree the permissible "PV" value and in some gear applications may be sufficient to prevent scoring, but in the case of highly stressed spiral bevel and hypoid rear axle gears, the use of extreme-pressure lubricants, that function through the formation of a solid film[6 7 10] on the gear surface, is required. These solid films act as an "anti-welding" flux and prevent metal-to-metal contact between the sliding or rubbing surfaces. Sufficient data are not available, at present, to establish the safe working "PV" values for the different types of extreme-pressure lubricants with spiral bevel or hypoid gears.

Comparison of Tooth Action

The tooth action of a spiral bevel gear is quite similar to that of a simple spur gear. Sliding or rubbing of the meshing teeth profile surfaces occurs above and below the pitch circle and in the direction of the involute tooth curve.

A hypoid gear is a special form of spiral bevel gear in which the pinion axis is offset from the axis of the ring gear. This offset introduces an additional longitudinal sliding action, lengthwise of the tooth surface. The resultant sliding velocity on a hypoid gear is therefore greater than the involute sliding velocity on a spiral bevel gear.

The magnitudes of the relative sliding velocities for the two types of gears are shown in Fig. 3. The tremendous percentage increase in velocity at the pitch circle and in the area adjacent is of no significance, as the values for "PV" in these areas are far below the critical for scoring or scuffing. But at the top of the tooth where scoring initially develops, rubbing velocities are approximately 15 to 20 per cent greater for the hypoid gear.

TEXT OF THE WOLF PAPER

THE commercial rear axle gear lubricants, available at the present time, may be grouped, with respect to load carrying ability, into four general classes as shown in Table II.

The name "extreme-pressure" should, logically, have been reserved for the powerful lubricants, and it is indeed unfortunate that it has been used commercially to designate the mild type of lubricants, now in general distribution, for use in the older model cars which require load carrying properties only slightly higher than can be obtained with the straight mineral oils. Any attempt to change a designation that has been in use for several years would cause a considerable amount of confusion in the field, consequently the present mild lubricants of the sulphur-saponifiable, sulphur chloride and chlorine types must continue to be designated as "E.P." lubricants. The real problem is to obtain agreement on a nomenclature for the powerful lubricants which will definitely distinguish them from the mild lubricants and avoid confusion in service. A number of refiners have already adopted the name "hypoid lubricant" for the powerful type. Some criticism has been voiced against this designation on the ground that it may interfere with the sale of the powerful extreme-pressure lubricants for industrial applications. However, it is believed that "hypoid lubricant" is the best compromise from the automotive viewpoint that can be reached at the present time.

The lead-soap active sulphur lubricant is the only type of powerful extreme-pressure lubricant now commercially available to the automotive industry. Consequently, in order to avoid confusion as to which type, of the commercial extreme-pressure lubricants is desired, and to insure maximum load carrying properties, a minimum and maximum lead-soap and sulphur content has been specified in some recent specifications. These specifications must not be interpreted as indicating that the automotive industry is demanding lead-soap active sulphur lubricants in preference to any other type or composition.

The automotive manufacturers are familiar with the faults of the lead-soap active sulphur lubricants. However, until a new type of powerful lubricant is developed, the lead-soap active sulphur type must be used in production and recommended for service in all axles requiring a powerful lubricant. As soon as new lubricants are developed and have been shown by actual service tests to be equivalent in load carrying properties to the present lead-soap active sulphur lubricants, the automotive industry will modify existing specifications to permit their use in production and service.

The present commercial "mild hypoid" lubricants in which active sulphur is replaced by active chlorine are satisfactory for some designs of spiral bevel and hypoid gears that require lubricants of higher load carrying ability than the mild "E. P." lubricants. The S. A. E. extreme-pressure lubricant testing machine[8] rates "mild hypoid" lubricants somewhat lower in load carrying properties than the "hypoid" lubricants. Before this difference can be evaluated quantitatively with respect to performance in service it will be necessary to accumulate service data on these two types of lubricants in a number of models that differ in their lubrication requirements.

For general distribution, most refiners and marketers will undoubtedly prefer to supply only one hypoid gear lubricant. It is evident that a lubri-

Low octane—too bad

Most cars operate well enough on a 70 octane fuel but if the dealer puts in something as low as 63 in octane rating the customer can tell the difference—WARD K. HALBERT in *Lubrication and Maintenance*

That's right

And when he finds out the difference do you think he will come back to your stations?

You know the answer

Dubbscracking is the way to make good gasoline that commands the market and commands the price

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

cant capable of operating satisfactorily under the most severe conditions will also function satisfactorily under less severe field conditions.

The mild "E. P." lubricants of the sulphur-saponifiable, sulphur-chloride, chlorine and phosphate types have been in general distribution for the past several years and have very largely replaced the straight mineral gear oil. These mild "E. P." lubricants will continue to be used, in service, in rear axles of older model cars.

Practically all car manufacturers object to the use of "hypoid" or "mild hypoid" lubricants in transmissions. The transmission unit does not require a powerful extreme-pressure lubricant and, in many cases, operates at a high enough temperature to cause rapid thickening or sludging of the less stable, powerful lubricants. For this reason, the mild "E. P." lubricants and the straight mineral gear oils will continue to be used in service in the conventional type of transmission unit.

Extreme-Pressure Properties

Load carrying capacity is, obviously, the most important property in extreme-pressure lubricants. Many laboratory testing machines have been developed for evaluating or classifying extreme-pressure lubricants. All of these machines show differences in load carrying ability but do not grade all lubricants in the same order. Some of these machines even grade lubricants contrary to their service performance.

While a positive correlation with performance in service cannot be secured until more complete data, on a larger number of lubricants of different composition, are obtained, the S. A. E. machine appears to grade extreme-pressure lubricants more accurately than any of the previous testing machines.

The load at failure on any testing machine depends, to some extent, upon the rate of activation or film formation. This rate of film formation[6] with different types of extreme-pressure addition agents may be quite different on a testing machine than in service. Therefore it may be necessary to consider the composition of the lubricant as well as the load at failure in predicting performance in service.

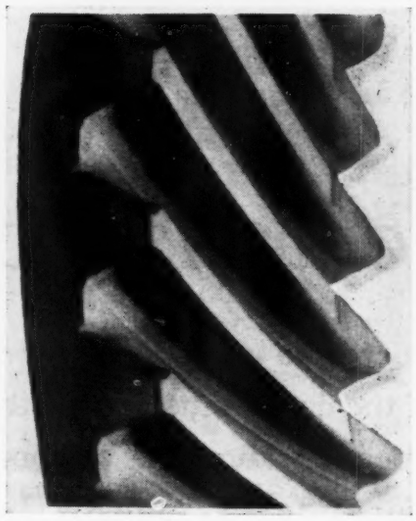

Fig. 2. Portion of a ring gear after a contact test. The dark areas on the tooth surfaces are the summation of individual instantaneous contact lines and represent the total areas of the teeth in action without reference to the maximum unit stress

Actual road tests in rear axles, under severe operating conditions, still remain the criterion in judging the suitability of a particular lubricant for a specific design.

Stability

Stability is probably the second most important property of extreme-pressure lubricants.

Extreme-pressure lubricants, particularly the powerful type, are in general not as stable as the refined straight mineral gear oils.

In the present commercial lead soap active sulphur powerful extreme-pressure lubricants it may not be possible to obtain both the maximum load carrying properties and the maximum stability. In these lubricants it may be necessary to compromise these two properties, depending upon the specific use for which the lubricant is intended. For example, for the original factory filling it may be necessary to sacrifice slightly on stability in favor of load carrying ability in order to provide a higher factor of safety in "breaking-in" new or green gears, while for service or refills in the field it may be highly desirable to stress stability and accept a slight loss in load carrying properties.

This compromise is sound for the reason that, under most normal service conditions, the extreme-pressure requirement of a gear set will be reduced through the "ironing-out" of service imperfections, and the work hardening of the tooth profile surfaces; and for the further fact that car owners are more careful in observing lubricating instructions on new cars, and in general the less stable lubricants used for the initial filling will not remain in

TABLE 1

These data indicate that the tendency of gears to score is in direct ratio to the factor "PV" (maximum tooth pressure multiplied by rubbing velocity), and that mineral oil is unsatisfactory as a gear lubricant when the value of "PV" exceeds approximately 1,500,000 *for this particular material*

		——Conditions Under Which Maximum "PV" Values Occur——				
Car	Condition of Gear Teeth When Lubricated with Mineral Oil	Pinion Speed R. P. M.	Pinion Torque Lb. Ft.	Unit Tooth Pres. Lbs./Sq. In. "P"	Sliding Velocity Ft./Sec. "V"	Maximum "PV"
1	No scoring.....	2400	328	71,900	16.70	1,200,000
2	No scoring.....	3450	112	73,400	18.42	1,355,000
3	No scoring.....	3710	100	84,700	16.40	1,392,000
4	No scoring.....	3720	96	94,700	14.75	1,402,000
5	No scoring.....	3820	90	87,200	16.05	1,403,000
6	No scoring.....	3850	87	87,600	16.20	1,420,000
7	No scoring.....	2970	91	80,000	17.85	1,430,000
8	No scoring.....	4060	92	88,200	17.05	1,505,000
9	Occasional scoring	3600	118	80,000	19.35	1,548,000
10	Occasional scoring	4000	95	86,600	17.80	1,551,000
11	Occasional scoring	3800	107	92,500	17.10	1,595,000
12	Bad scoring	3600	97	109,200	15.40	1,676,000
13	Bad scoring.....	3800	109	108,000	16.60	1,800,000
14	Very bad scoring....	4266	88	79,300	23.25	1,848,000
15	Very bad scoring....	3810	90	101,200	18.32	1,852,000
16	Very bad scoring....	3800	109	95,800	20.05	1,932,000
17	Very bad scoring....	2400	328	75,000	26.75	2,010,000

CONTINENTAL CANS for HYPOID LUBRICANT

● The advent of Hypoid Gears has brought to the manufacturers of gear lubricants a marketing opportunity – and a packaging problem. Continental, keeping pace with the industry in which it pioneered the principle of Canned Motor Oil, is first to produce a container for Hypoid Lubricant.

● This new container has proved itself in actual use. It is a 1-pound refinery-sealed can, absolutely impervious to the high penetrative qualities of Hypoid Grease; a mighty essential requirement in view of the lubricant's tendency to stain cloth or similar materials.

● The Continental can for Hypoid Lubricant is adaptable to high-speed filling and closing. Complete with built-in expulsion disc, it is available NOW to manufacturers of Hypoid Lubricant. There is a Continental representative nearby who can give you full particulars.

CONTINENTAL CAN COMPANY

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CINCINNATI
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MEMPHIS

WHEELING
NEW ORLEANS
HOUSTON
DETROIT
JACKSONVILLE

SAN FRANCISCO
LOS ANGELES
KANSAS CITY
OMAHA

service for as long a period as the service lubricant.

These remarks concerning the desirability of stressing stability, at the expense of load-carrying properties in service lubricants, must not be interpreted as indicating that hypoid or highly stressed spiral bevel gears can be satisfactorily lubricated by the mild "E. P." lubricants of the sulphur-saponifiable, sulphur-chloride, chlorine or phosphate types, after they have been run in with the more powerful extreme-pressure lubricants. In order to provide as high a factor of safety as possible and to guard against failures under extreme driving conditions, hypoid gears should be lubricated in service with "hypoid" lubricants. The continuance of "hypoid" lubricants in service is highly desirable.

Stability in storage is extremely important, particularly in service lubricants. The precipitation of lead soap or sulphur at low temperature or a chemical reaction between the lead and sulphur or chlorine may result in a loss in extreme-pressure characteristics as well as the formation of undesirable sludge.

The loss in load carrying ability at elevated temperatures is another important consideration under the general subject of stability. The lead soap lubricants, that function through the presence of active chlorine, completely lose their extreme-pressure characteristics on heating for 16 hours at 200 degrees F.; the lead soap lubricants, depending upon active sulphur, will withstand somewhat higher temperatures, but on heating for 16 hours at from 225 to 250 degrees F. they show a marked drop in load carrying ability. The behavior of the present types of lead soap lubricants at moderate temperatures emphasizes the necessity of additional development work on this phase of the problem and on the necessity of avoiding the use of these lubricants in equipment, such as bus and truck axles, that normally operate at temperatures much higher than passenger car axles and do not require the more powerful lubricants for satisfactory performance in service.

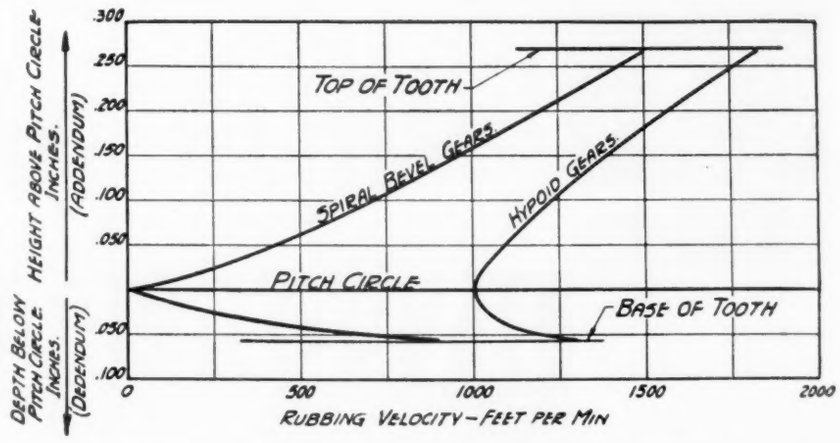

Fig. 3. A graphical picture of rubbing velocities at all stages of a tooth contact on a hypoid gear and on the spiral bevel gear. Of most significance is the increase in rubbing velocity at and near the top of the tooth, which is over 20 per cent in this instance

Increase in viscosity through oxidation or polymerization, and the separation of tarry or asphaltic materials in service are, probably, the most important current problems in connection with stability.

An increase in viscosity is especially important as it may cause channeling in cold weather and permit scoring through lack of adequate lubrication.

Solid materials in suspension in a lubricant will greatly reduce the life of ball and roller bearings. Pitting of the balls or rollers and races, and in some cases wear on the balls or rollers and retainers or spacers may occur. Solid materials, such as graphite, which in certain applications may be excellent lubricants, will cause rapid pitting of ball bearings, and if present in sufficient quantities may actually cause splitting of the balls.

Oxidation and polymerization products, and tarry or asphaltic materials separating from the more unstable lubricants under the operating conditions prevailing in laboratory bearing testing machines[4] have been shown to act in the same manner as solid materials and cause failure through pitting. Under the same laboratory testing conditions the more stable lubricants give practically the same bearing life as high grade well refined mineral oils.

Failures of this type have been reported in service, but on the other hand some of the lubricants that cause pitting on the laboratory bearing testing machine have been used in the past in passenger car axles, probably under somewhat less severe operating conditions, with apparently satisfactory results. It does not, however, necessarily follow that these less stable lubricants will continue to function satisfactorily in service and provide a sufficiently high factor of safety in present or future designs.

A number of laboratory methods have been proposed for predicting stability in service. Although many of these methods are useful in comparing both commercial and experimental lubricants and in describing the type of material desired, sufficient reliable data, from actual road tests under service conditions, are not available at present to permit complete correlation with performance in service and the formulation of (A.S.T.M.) standard laboratory testing methods.

Wear

In discussing wear as related to extreme-pressure lubricants three separate and distinct types of wear must be recognized.

A. Wear, due to mechanical abrasion or lapping action,

B. Wear, due to failure of lubricant to prevent metal to metal contact, and

C. Wear, due to extreme-pressure action of lubricant.

The methods employed in the

manufacture of the early extreme-pressure gear lubricants were crude and many probably contained abrasive solids in suspension. Some of these early lubricants caused rapid wear or lapping of ball and roller antifriction bearings and resulted in a general condemnation of the powerful type of extreme-pressure lubricant. These experiences with poorly and unproperly compounded products have caused many refiners to hesitate to produce lubricants of the maximum load carrying properties.

Improved manufacturing methods under careful technical supervision have practically eliminated this source of trouble. One of the large bearing manufacturers[4] reports, "—we are no longer alarmed over the wear caused by E. P. lubricants, as none of the oils tested in our standard wear tests since 1932 have shown sufficient wear to be considered objectionable."

Wear, caused by the failure of the lubricant to support the load and prevent metal to metal contact, is sometimes confused with abrasive wear. This type of wear is mild scoring and is due fundamentally to the inadequate load carrying properties of the lubricant.

Long time wear tests conducted on the S. A. E.[8], Almen[10], and other laboratory testing machines indicate serious wear at loads considerably lower than the maximum "load at failure" as determined by the short time or conventional load carrying test. In general the wear on laboratory testing machines, under low load conditions, is low with all types of lubricants and is probably within the experimental error for this type of determination, while under high load conditions the wear in most cases is in inverse ratio to the load carrying ability of the lubricant.

In rear axles the use of a mild type of lubricant, where a powerful lubricant is required, may cause slight scoring or scuffing at high speed. Continued driving at a lower speed may smooth or "heal" the torn surfaces. This process of alternate scoring and healing may be, in many cases, sufficiently well balanced so as not to produce the characteristic axle "hum" but will eventually result in an increase in back-lash and a clucking noise when driving at a low or a moderate and uniform speed on smooth pavement.

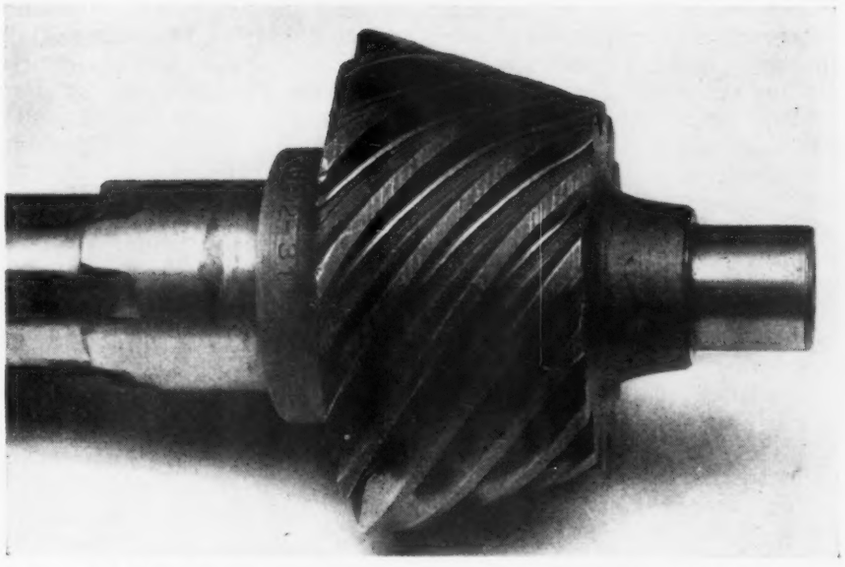

Fig. 4. This hypoid rear axle pinion was operated for approximately 5000 miles. without wear, on a powerful lead-soap active sulfur extreme-pressure lubricant. The wear shown above (approximately one-third of the original tooth thickness) occurred in less than 300 miles operation on a mild sulfur-saponifiable lubricant

Wear resulting from the substitution of a mild type lubricant is illustrated in Fig. 4. The pinion teeth were worn to approximately two-thirds of their original thickness in less than 300 miles. Failures of this type can only be avoided through the use of lubricants having high enough load carrying ability to provide the necessary factor of safety in service.

Wear due to the extreme-pressure action of a properly balanced lubricant is microscopic in character and of no practical significance. In a design that depends upon a powerful lubricant for successful operation this microscopic wear must be regarded as a film forming function rather than as wear in the generally accepted sense of the word.

Corrosion

Active extreme-pressure addition agents, in the absence of suitable corrosion inhibitors, may cause corrosion in service, particularly in the presence of water.

The lead soap active sulphur lubricants will darken or blacken copper, but these lubricants do not corrode axle parts in service, either in the presence or absence of water. The lead

TABLE 2

Four types of commercial gear lubricants are classified here as to type or chemical addition agents used, use in automotive rear axles, and number of pounds test-load for which each is recommended

Nomenclature Most Generally Accepted by the Industry	Type	Use	Load Carrying Properties S. A. E. Machine*
Hypoid Lubricant.....	Lead Soap, Plus Active Sulfur	Hypoid and Spiral Bevel Gears (Original Filling and Service)	Over 550 Lbs.
Mild Hypoid Lubricant....	Lead Soap, Plus Inactive Sulfur and Active Chlorine	Hypoid and Spiral Bevel Gears (Original Filling and Service)	250 to 350 Lbs.
Mild E. P. Lubricant.....	Sulfur-Saponifiable, sulfur-Chloride, Chlorine, Phosphate	Older Model Spiral Bevel Gears (Original Filling and Service). Some Hypoid Gears Service Only)	100 to 200 Lbs.
Gear Lubricant	Straight Mineral Oil	Spiral Bevel Gears	Under 100 Lbs.

*S. A. E. E. P. lubricant testing machine speed, 750 R. P. M.; rubbing ratio, 14.6:1; rate of loading, 83.5 lbs. per second.

soap, in addition to acting as an extreme-pressure agent under the more severe operating conditions serves as a corrosion inhibitor. Active sulphur, without lead soap, blackens copper while active chlorine does not appreciably affect the appearance of the copper. Both active sulphur and active chlorine without lead soap corrode steel. Consequently, blackening of copper in the laboratory copper strip test indicates only the availability of the sulphur addition and does not predict the behavior, in service, with respect to corrosion.

For many years, extreme-pressure lubricants containing lead soap and active sulphur have been incorrectly referred to as "corrosive lubricants" or "corrosive-sulphur" lubricants. This nomenclature is misleading to automotive engineers not familiar with the chemistry of extreme-pressure lubricants. "Active" sulphur is a more accurate designation. The term "corrosive-sulphur" should be limited to the straight sulphurized mineral oils.

Channeling

The highly stressed spiral bevel and hypoid gears must have an adequate supply of lubricant at all times and under all operating conditions. Channeling, therefore, is a much more important property in extreme-pressure lubricants than in the older types of mineral gear oils. Scoring and scuffing of the tooth profile surfaces may occur, at low loads and at low speeds, if the lubricant channels at the operating temperature.

Car manufacturers are, in general, recommending seasonal changes of the rear axle lubricant. As a further precaution against the use of a high viscosity and high channel point summer lubricant during the winter months, most car manufacturers recommend "S. A. E. 90 hypoid" lubricant for "all-year" service, except in the Northwest and in Canada where "S. A. E. 80 hypoid" must be used during the colder months.

Foaming

Foaming of a lubricant in service is extremely objectionable. Excessive foaming will deplete the supply of lubricant in the axle housing and in some cases will force lubricant through the wheel bearings onto the brake drums.

Future Developments

The automobile of today is not fundamentally different from the automobile of ten years ago. The many improvements, that have been made, have resulted largely through the better utilization of materials. The trend in gear design is likewise directed toward the utilization, to a greater degree, of the inherent properties of gear materials. It, therefore, appears that future gear designs may require lubricants of higher load carrying ability than the most powerful commercial extreme-pressure lubricant available at the present time.

The immediate problem is one of improving the stability of the present types of powerful extreme-pressure lubricants.

Research, on new extreme-pressure addition agents, should obviously be directed toward maximum stability under all operating conditions.

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Apparatus Shows Film Properties of Oil

The characteristics of oil films on water are said to be revealed in a remarkable manner by a newly developed apparatus described by Prof. W. D. Harkins and Dr. R. J. Myers of the University of Chicago before the physical chemistry section of the American Chemical Society at Pittsburgh, Sept. 10.

Certain oils of vegetable or animal origin spread on a clear water surface to a film one molecule thick, while a pure mineral oil will not spread at all. A small amount of vegetable or animal oil, added to a pure mineral oil, causes the oil to adhere much better to steel and thus greatly improves the lubricating characteristics of the oil.

These mixtures were found to produce films more than one molecule thick, contrary to theories held by workers in surface chemistry. It was found that these films are expansible, dependent upon factors as yet not fully determined but partially due to the size of the molecules and the way they attach themselves to each other. In the completely expanded state the addition of mineral oil merely thickens the film and does not cause it to spread further. In this state one ounce of oil is said to cover several acres of water surface.

HIGH NOON on a southern pier. The S. S. York of the Merchants & Miners Transportation Company is due to dock from Baltimore at 6 P. M. Waiting longshoremen are wondering if it will bring them work.

In the office of the M & M General Agent, a teletypewriter begins to click off the York's cargo list, exactly as it is being typed at Baltimore. . . . At 6 o'clock, when the gang-planks go down, the right number of men and the right kind and number of freight cars are ready. The York unloads and sails again on schedule.

M & M first tried Bell System teletypewriter service (typing-by-wire) at two ports in 1934. It proved valuable so quickly that machines were shortly installed at seven other offices.

A volume of fast, accurate typewritten communications regularly sweeps back and forth between the various offices. Orders. Reports. Estimates. Passenger reservations. Many kinds of administrative matters. Questions are asked and answered on the same connection. Identical records of every word exchanged definitely fix responsibility.

★ "Typing-by-wire" has provided this modern, organized communication service at a substantial saving over former costs, according to M & M's own survey. Bell System representatives will be glad to review your business with you, and perhaps develop comparable economies. No charge. No obligation. Call your local telephone company.

Lease Bulk Plants to Jobbers
Majewski Urges the Majors

CHICAGO, Nov. 9

DECENTRALIZATION of marketing operations by the integrated oil companies, through leasing out to jobbers their bulk distributing facilities, with the exception of water and pipeline terminals, is suggested by B. L. Majewski, Deep Rock Oil Corp., Chicago, in a paper on the "Iowa plan", to be presented Nov. 11 at the meeting of the American Petroleum Institute here.

"Jobber's representatives have contended for some time that the jobber's cost of distribution is less than that of most integrated marketers," said Majewski on this point.

"Why not give them the same opportunity given the dealers under the 'Iowa' plan? As a matter of fact, some integrated marketers have already converted some of their bulk-plant operations to a jobber-operated basis, and I am told have found this basis of operation mutually satisfactory.

"The integrated or non-integrated refiner would then merely supply the gasoline to his jobber at the spot tank-car market price, and the jobber would in turn supply dealers at his posted dealer price.

"This would put the responsibility of market-structure making on the jobber and dealer, and permit them to meet the competition offered in their respective operating areas without the limitations now imposed on large integrated marketers by state anti-discrimination statutes.

"Selling the jobber on an open spot tank-car market basis—if practiced by all refiners—would, through this element of day-to-day competitive buying, create a tank-car price mechanism that would withstand all criticism.

"In my opinion, an 'Iowa bulk plan' is worthy of serious consideration. It would certainly stop complaints for investigations and agitation for 'controlling or disintegrating' legislation.

"The 'Iowa' plan, as we now practice it, primarily leaves the retail situation in the dealer's hands; however, both the jobber and bulk distributor are vitally affected."

Preliminary to his discussion of the "Iowa plan" of operating stations, Majewski made three suggestions to promote industrial peace in the oil industry.

First, bring a cessation to the gospel of bitterness and hate now prevalent in the industry, letting the oil trade journals do a "constructive work of placation."

Second, let all factions in the industry, from production through to the retail pump, immediately join in a concerted movement urging the Federal Trade Commission to call a public hearing on the proposed code of fair practices for the marketing of petroleum products, and at that hearing insist on its approval.

"Under the code, as at present written, settlement of all remaining problems is possible of solution by the industry itself," he said.

Third, let that portion of the jobbing industry at present engaged in agitation suggest a remedial plan economically sound to the rest of the industry.

"If the jobbers are suffering, I want to help them," said Majewski, "and I am sure the refiners dependent on the jobbers for their market outlet feel the same way."

In discussing the "Iowa plan" in retailing, he said the all-important fact is that the making of service station prices is now in the hands of the dealers.

B. L. Majewski, of Deep Rock Oil Corp., Chicago, a speaker on the "Iowa Plan" from the refiner's standpoint, at the marketing gronp session Nov. 11 of the American Petroleum Institute's meeting at Chicago

Wilmer R. Schuh, president of the National Association of Petroleum Retailers, Milwaukee, Wis., who speaks on the "Iowa Plan" from the retailer's point of view, at the marketing group session Nov. 11 of the institute's annual meeting in Chicago

Wildcat Hits Granite

TULSA, Nov. 5.—The important wildcat test of Byrd-Frost, Inc., Dallas, in Grant county, western Nebraska, is being abandoned after hitting granite at 4036 feet. Test is in NE NE NW of 22-24n-28w Magnolia Petroleum Co. was interested in the well and several

Buick Adopts Hypoid Rear Axles On Two Models For 1937

By JOHN W. THOMPSON
N. P. N. Staff Writer

BUICK pulls back the curtain on its 1937 models, revealing four lines of cars. They bear the same series numbers as last year, namely 40, 60, 80 and 90, but the wheelbases have been increased on the series 40 and 60 and the engines stepped up in power.

The series 40 Buick for 1937 has a 122-inch wheelbase and is powered by a 100 horsepower valve-in-head straight eight engine, as against 118 inches wheel base and 93 horsepower last year.

The series 60, 80 and 90 are powered by a 130 horsepower engine, a boost of 10 horsepower over last year's engine for these models. Wheelbases of the 60, 80 and 90 models are 126, 131, and 138 inches respectively.

As in many other 1937 cars, Buick is featuring more roominess. While the overall height of the Buicks has been reduced one inch, the floor has been dropped 2.5 inches.

The stepping up of the power in the series 40 engine was accomplished by a series of improvements including an increase of ¼-inch in the stroke, which stepped up the displacement to 248 cubic inches, adoption of streamline intake valves, and a new exhaust system with decreased back pressure.

Similar refinements resulted in increasing the horsepower of the larger engine from 120 to 130. This engine now has a 3 7/16-inch bore and 4 5/16-inch stroke, 320.2 cubic inch displacement and a compression ratio increased from 5.45 to 5.75 to 1.

Engine lubrication is by pressure to all main, connecting rod, and camshaft bearings and rocker arm shaft bushings. There is positive feed also to the timing chain and valve lifter mechanism and the cylinder walls are bathed in a constant spray of oil.

This year Buick has eliminated the need of an oil filter by means of a new type of floating oil pump screen and inlet pipe. This new device floats the mouth of the inlet pipe and oil screen near the top level of the lower crankcase, drawing oil from the top only, so that any dirt or sludge formation is not permitted to enter the circulating system.

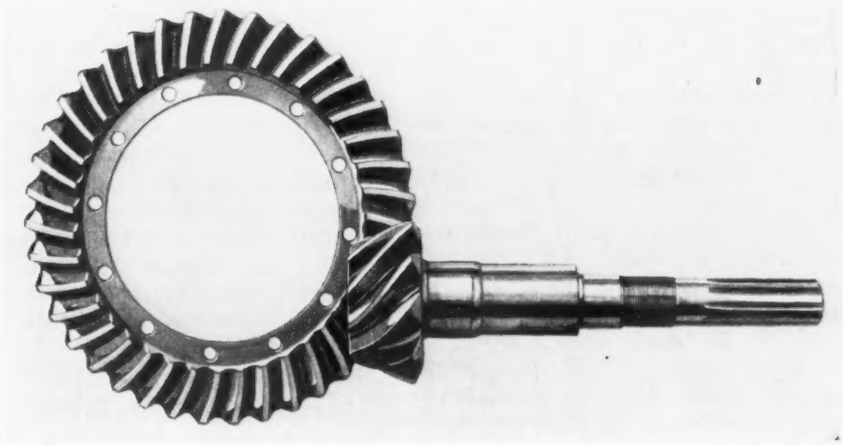
In the cooling system of the 1937 Buick engines, the recirculating system has a special by-pass valve which permits anti-freeze mixture to circulate freely without expansion and consequent overflow.

Buick this year introduces the new aero-type carburetor. It is a dual float, single bowl carburetor of the dual down draft type. The outstanding feature claimed for the new carburetor is the design and location of the bowl and float mechanism, which provide for a constant supply of mixture to the cylinders regardless of the angle of the level at which the carburetor is tipped and regardless of the level of the fuel in the bowl when subjected to violent changes of direction or velocity.

Anodized light-weight alloy pistons are fitted with two compression and two oil rings, the compression rings slightly tapered across the face to produce a closer fit between ring and cylinder wall during the engine's early life.

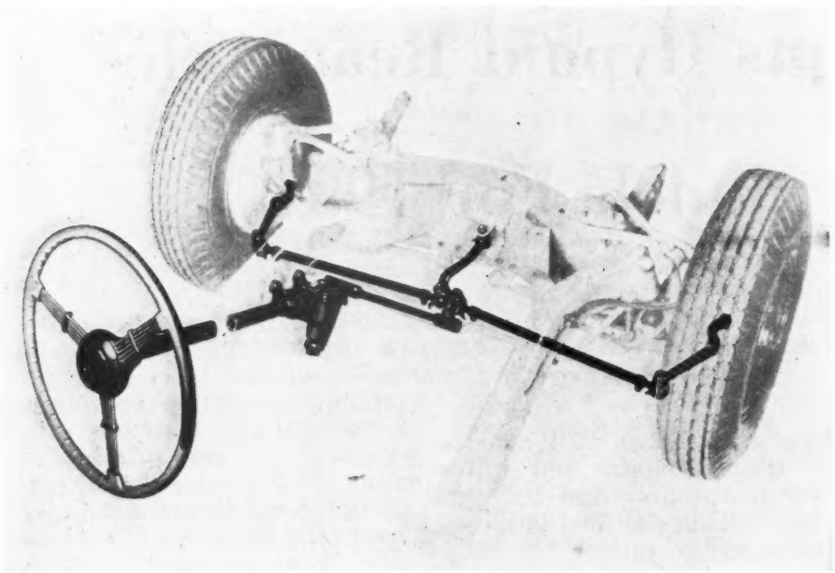
OTHER features include an automatic choke with provision for automatic de-flooding, automatic idle control, automatic heat control of the intake manifold, and vacuumatic spark advance.

Bodies of the series 40 and 60 are all-steel, or Unisteel as they are called, and are a new venture for Fisher Body, which until this year has clung religiously to wood and steel construction.



The Hypoid ring and pinion gear used in the series 40 and 60 Buicks for 1937. The series 80 and 90 have the conventional spiral bevel rear axle

The center point steering mechanism used on all 1937 Buicks



Lubrication Requirements

From a lubrication standpoint, probably the outstanding change is found in the series 40 and 60 rear axles, which are now hypoids. Although the series 80 and 90 rear axles are of the spiral bevel type, lubrication specifications are the same for all four models. It is recommended that the rear axle be drained, flushed and refilled twice a year, and an S. A. E. 160 E. P. lubricant be added for summer, and an S. A. E. 90 E. P. for winter. It is further recommended that the rear axle oil level be checked every 2000 miles.

Changes are few on the independent front wheel suspension, which is similar to last year's design. On the series 40 and 60 there is a new lubrication point, on the intermediate steering arm, which can be reached from the bottom. It is located directly in the center of the suspension system and requires a chassis lubricant every 1000 miles.

The upper control arms of the wheel suspension system now have two pressure fittings at their outer ends, in place of the one for each arm last year.

Rear wheel bearings, a troublesome lubrication point last year, this year are lubricated from the axle housing.

A new lubrication point is to be found on the front end of the series 90 torque tube. It has a screw plug which must be removed every 1000 miles and engine oil added.

It is now recommended that the transmission level be checked every 1000 miles, instead of "frequently", as was formerly recommended. Specifications call for an S. A. E. 160 lube for summer and 90 for winter. It is recommended that the transmission be drained, flushed and refilled twice a year.

A pressure fitting which was located on the pedal shafts of all models last year, is now on the series 40 only and takes a chassis lubricant every 1000 miles. Other new points include a pressure fitting on the series 60 brake pedal, and a fitting on the series 40 clutch pedal equalizer shaft. Both points require a chasis lubricant every 1000 miles.

Last year only the series 40 water pump and fan were lubricated with light engine oil through an oil cup. On the new Buicks, all series will use a 10-W engine oil for these points. Lubrication is specified at 1000-mile intervals.

Engine oil specifications remain the same as last year, with viscosities ranging from 10W plus 10 per cent kerosine to S. A. E. 30. Following last year's plan, Buick again recommends an oil change every three months.

A steering gear lubricant is specified for the steering gear, with the caution that a pressure fitting must not be used in the filler plug hole when filling the gear as this will force oil up the steering column.

In lubricating the front wheel bearings, the wheel, wheel hub and drum are removed as an assembly. It is recommended that one tablespoon of wheel bearing lubricant be applied to each ball bearing. At the same time the felt oil seals should be examined for wear or leakage.

Capacities, for the most part remain the same. Crankcase capacity is the same, with 6 quarts for the series 40 and 8 quarts for the other models. Rear axle capacity on the series 40 remains at 3 pints and on the series 80 at 4 pints. The series 60 rear axle now requires 3 pints instead of 4, and on the series 90 the rear axle capacity is now 4 pints instead of 4½.

The cooling capacity of the series 40 is the same as last year, being 13¼ quarts. The cooling capacities on the series 60, 80 and 90 remain at 17 quarts.

Burner Show Takes In Air Conditioning

NEW YORK, Nov. 5.—The thirteenth annual National Oil Burner Show will be held in Philadelphia the week of March 15 to 19, 1937, the Oil Burner Institute announced today. The show will include exhibits of air conditioning equipment as well as oil burners and oil burning accessory equipment.

The general purposes of the oil burner show, according to G. Harvey Porter, managing director of the institute, are to present to the dealers from varied markets and to the general public the advancement of the industry and the superior advantages of oil as a fuel.

The next quarterly meeting of the institute board of directors will be at the Benjamin Franklin Hotel, Philadelphia Jan. 11 and 12.

ADVERTISING PAGES REMOVED

WINTER COMFORT MARKET

Open to ALERT STATIONS

Rising Income of Motorists Will Enable Them To Buy Items and Equipment for Their Cars Which They Have Been Denying Themselves

This display shows some of the many winter accessory items that will be in greater demand by motorists this season than for the past few years

By JOHN W. THOMPSON
N. P. N. Staff Writer

• • •

IN GENERAL, oil companies are well aware of the assistance cold weather offers for the sale of winter conditioning items. The need for winter lubricants is becoming more widely recognized by motorists. This consciousness on the part of motorists is due in no small measure to the consistent efforts of oil companies to push winter conditioning service.

In many cases, however, extra profits are being overlooked by service stations in the sale of winter accessories. The recent retail distribution census of the U. S. Department of Commerce showed filling stations sales for 1935 were 28 per cent above 1933. Not all of this increase, by any means, was due to extra gasoline and oil sales resulting from the greater use of their cars by people who had before been economical in driving.

Much of this increase in sales came from items which catered to the desire of the American people for comfort and convenience, merchandise which was sold with difficulty to the average motorist two or three years ago. This winter, however, with incomes rising, motorists will buy more of these comfort and convenience items than last winter even.

The result will be a wider market for winter accessories, items that contribute to the comfort, convenience and safety of the car owner and his family, but which are not necessary to the actual operation of the car. The service station of today can handle many of them.

The list of potential winter profit items is long and varied. It includes such articles as heaters, radios, windshield defrosters, windshield wipers, radiator winter fronts, auto robes, radiator winter fronts for increasing heater efficiency, horns, flashlights, tow ropes, fog lights, safety reflectors, tire chains, mirror clocks, seat covers, cigar lighters, fender guide lights, fender flaps, and driving gloves.

One service station, specializing in a wide line of automotive accessories, is finding a large market for auto horns, which its owner feels is an indication that the motorists' pocketbooks are loosening up.

The introduction of new cars in November, instead of January, is looked upon by some accessory houses as a boost to their business. Owners of new cars are considered among the best prospects for winter accessories.

IN A survey among Chevrolet dealers it was found that owners of cars between one and three years old are excellent prospects for winter items. This group, knowing they will be driving their cars for another year or so, but having seen the new cars, feel their own lacks something from a standpoint of comfort, convenience, or safety.

This group has been found to be most susceptible to the sale of such accessories as fender markers, horns, windshield wipers, ornamental markers, interior sun visors, vanity mirrors, radios, heaters, and right hand tail lights.

These Chevrolet dealers

found that their accessory stock moved much quicker when it was put out on tables where it could be easily seen and inspected. Even their so-called "obsolete" stock sold in a short time by using this 10-cent store display method.

The Hudson Motor Car Co. considers accessory sales the car dealer's business barometer. This company observes that accessory sales rise rapidly when the country enters a prosperous period, continue heavy through the period, and then taper off to follow any downward trend in the economic cycle.

Hudson dealers report an excellent demand for heaters, radios, special steering wheels, wheel discs, special tail lights, mirrors, clocks, seat covers, special chrome equipment and horns. So far this year, these dealers have reported a 275 per cent increase over 1935 in heater sales. Radios have shown a 50 per cent gain over the same period. Fog lights have also reached fad proportions, it is reported.

Dealer discounts from distributors of automotive accessories range from 15 to 25 per cent, while oil companies who act as distributors of accessories to dealers receive approximately 40 per cent off on accessory items.

Tips to Winter Conditioning Opportunities

Follow This List--Check Every Item

Crankcase

Drain, flush with ENNJAY Flushing Oil, refill with winter viscosity of ESSO Motor Oil or ESSOLUBE Motor Oil.

Gear Cases

Drain, flush, refill with winter consistency of ESSOLUBE Gear Oil or ESSOLEUM Expee Compound.

Lubrication

Thorough chassis lubrication to protect car against splashing slush and water. See that the water pump, the distributor, and other engine points are lubricated for hard work during cold weather.

Radiator

Clean out with "X"Flush, make watertight, if necessary, with TRI-RAD Stop Leak, and fill with proper mixture of ESSO Marketers Anti-Freeze Alcohol and water.

Oil Filter

Replace if it has passed the 10,000-mile mark. Sell a new Handy Oilfiltor if the car is not equipped with a filter.

Battery

Test with hydrometer. If low, place on regular testing unit for further check. Recharge or replace with a new ATLAS if necessary.

Spark Plugs

Clean and test. Replace worn or broken plugs with new ATLAS Champions.

Fan Belt

Test for tension and flexibility. Inspect cover. If belt is worn, sell a new ATLAS Fan Belt. Be sure generator and water pump both turn properly if connected by the belt.

Hose Connections

Check all radiator connections. If a rotted one is found, replace all connections with ATLAS Radiator Hose for security.

Tires

Check every tire, including spare, for condition and thickness of tread. Be sure the car is equipped with rubber that will pull in snow. Sell new ATLAS Grip-Safe Silent Treads if needed. If required, sell a set of ATLAS Lug-Grip Tires.

Chains

Check customer's present set. Repair if possible. If not, sell him a new set of Weed Tire Chains. (This is particularly important for northern dealers.)

Heater

Attach car's heater. If it is not equipped with one, sell the customer a new ATLAS Car Heater for winter driving comfort.

Wiper Blade

Test carefully. If dried out or worn, replace with a new ATLAS. Check wiper arm, also. If bent, replace with a new one.

Lights

Check every lamp, inside as well as outside of car, to see that all are working. Replace burnt ones with new ATLAS GE Mazdas for driving at night and on dark days.

Cut This Out, Paste It Up, Use It as a Guide

The Standard Oil Co. of New Jersey, through its publication, the Esso Dealer, urges its dealers to use this chart as a guide in soliciting winter conditioning business

NOT only can the sale of winter accessory items bring a substantial profit to the service station, but the installation of some of these items offers an excellent source of extra profit.

On heaters, for example, the common installation charge ranges from $2 to $4, depending upon the type of heater and the car in which it is to be installed. The job can be completed in about one hour and the work in connection with the installation is not complicated. A small portable electric drill is helpful, though not necessary. On some cars it is advisable to tap the cylinder block for the lead pipes to and from the heater. On other installations, radiator hose adapter fittings are used.

Many of the 1936 and 1937 cars are equipped with heater outlets on the engine block, which greatly simplifies the installation job for the service station attendant. Then, too, practically all the 1937 cars are designed with warm air ducts leading to the top of the instrument panel and which, when connected to the heater, direct a flow of warm air onto the windshield to defrost it. While this new development reduces the potential market for windshield defrosters, it does increase the desire on the part of the new car owner for a heater, a desire that will sell many of this item to owners of 1937 automobiles.

The sale of a heater also pre-

When the Mercury is down KEEP YOUR PROFITS UP

with XACTOMATIC show-Case Pumps

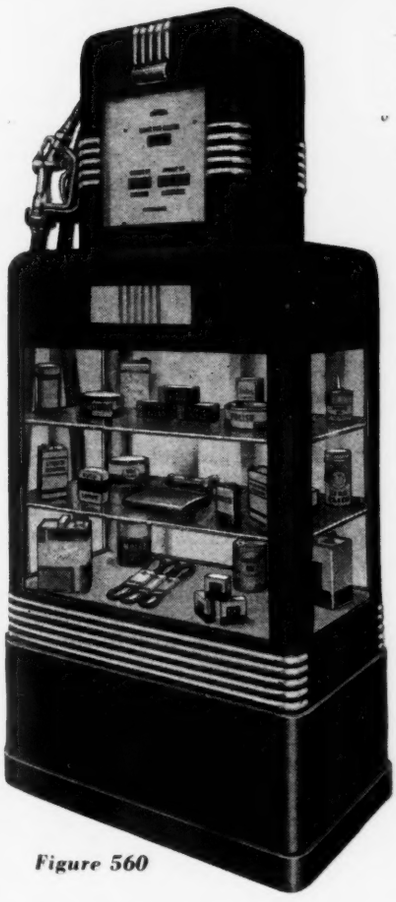


Figure 560

(Above). The Xactomatic Senior Showcase. Has 8¾ cubic feet of brightly illuminated space. Two doors. Adjustable shelves. Completely weather-proofed . . . and it has *no* center shaft to disrupt display.

(At the right). The Xactomatic Junior Showcase. A genuine showcase—glass on four sides. End door. Adjustable shelf—and *no* center shaft.

S. F. BOWSER & COMPANY, INC
Fort Wayne, Indiana

WINTER! Sure, fuel and light bills go up and gallonage down. BUT, man, that's the year's best season to sell profitable accessories—the modern way to keep winter profits up!

To sell MORE accessories—to make MORE profits, display them at the most logical spot — the island — the place where customers can see them — and where you can suggest them. Make "Sell MORE accessories" your winter sales slogan. Then install Xactomatic Show Case Pumps and you'll sell MORE. Get complete details, NOW!

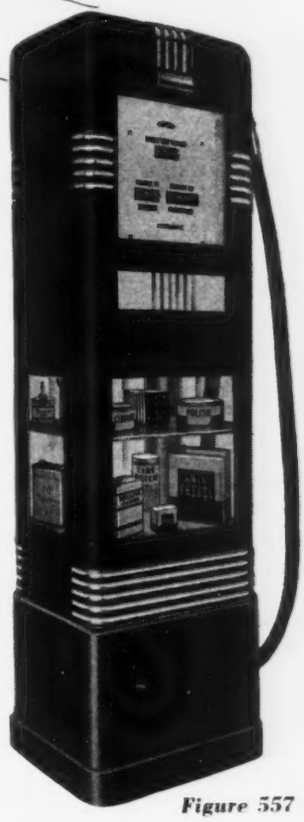


Figure 557

BOWSER ESTABLISHED 1885

XACTOMATIC

TODAY'S BIGGEST BUY IN COMPUTING PUMPS

S. F. Bowser & Co., Inc.
1334 Creighton Ave.
Fort Wayne, Ind.

We're interested in making MORE profit. Tell us all about:

( ) Xactomatic Junior Showcase
( ) Xactomatic Senior Showcase
( ) Standard Xactomatic
( ) Non-computing type pumps

Name.....

Address.....

City.....State.....

The final stage of the work of installing a car heater. The job can be done in an hour's time and is not complicated, particularly with the newer model cars. The installation charge runs from $2 to $4

sents opportunities for the sale of other items. For example, a radiator winter front can be suggested as an aid to getting greater efficiency from the heater. Another item, accomlishing a similar purpose, is the thermostat for placing in the radiator hose.

THE car radio is another winter convenience item on which an installation profit, as well as a sales profit, can be made. Charges of $3 and $4 are quite common for installing a radio in a car, the job requiring about an hour and a half of a station man's time.

In addition to these many profitable luxury items, the station should push its service of conditioning cars with the necessity items for winter driving.

The necessity of anti-freeze of course, is fundamental; but there is more profit in this item than just the margin on the anti-freeze itself. Often a radiator flush can be sold at the time the anti-freeze is put in. At the same time, the radiator hose should be inspected, and replacements made where necessary.

Motorists are becoming better informed on the reasons why lighter engine oil should be used in winter. Car manufacturers are practically unanimous in their recommendations for lighter engine oils for winter operation, a factor which also helps to reduce sales resistance to oil changes.

Equally important in the proper winter servicing of every car is the need for winter lubricants in transmissions and differentials, and in some cases, steering gears. Hypoid rear axles, because of their great load carrying capacities, should be definitely serviced for winter driving, as considerable damage may result if too heavy a lubricant is used.

In addition to refilling the crankcase, transmission and differential for winter, additional profit can be obtained from a flushing job of these units. Owners of cars with hypoid rear axles should be urged to have their rear axles drained and flushed before adding a new extreme pressure lubricant. It should be explained to the car owner that to add an e.p. lubricant where another type may have been used before may result in serious damage to the rear axle, due to a possible chemical reaction that is likely to take place between e.p. lubes of different characteristics. A flushing job is the safe procedure to follow in this case, and this fact should be emphasized to the customer.

Often car owners will consent to having the front wheel bearings lubricated for the winter. Most stations charge extra for this service, and there is a good profit in it. The service includes removing the front wheels, washing and cleaning the bearings and races, repacking, and replacing the wheel.

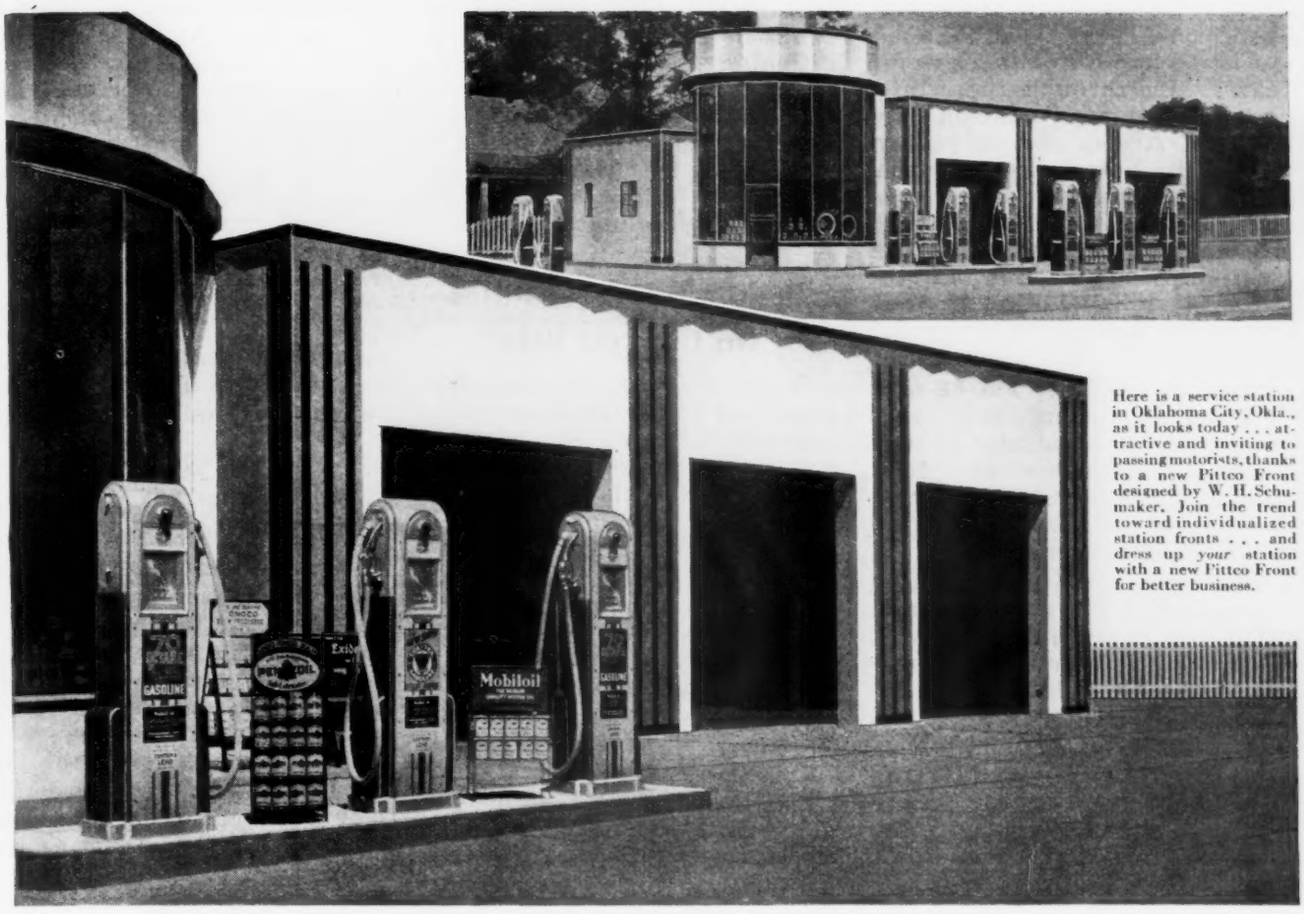
The electrical system also offers many profit possibilities for winter servicing. The battery of every car entering the station should be checked to determine its condition for winter driving. Possibly it may need only water, but on the other hand it may need recharging, or even replacement. Batteries should be watched closely all winter, for in cold weather the average battery is only about 60 per cent efficient, and in addition it is called upon to supply more power than during the summer months. Lights burn longer, heaters are operating, and starters are used more continuously.

After the battery has been tested, the station attendant can turn to the spark plugs and ignition cables for other profit possibilities. A good hot spark is needed for efficient winter operation and good spark plugs and ignition cables are prime requisites for good engine efficiency. A simple spark plug test will often result in the sale of new plugs, and ignition cables that are covered with grease and dirt can be pointed out to the customer, with the suggestion that they be replaced before they deteriorate and reduce the spark efficiency.

THE winter months will uncover many light bulb sales. Shorter days and longer nights mean that lights will burn longer—and burn out quicker. The lights should be tested on every car that enters the drive during the winter.

Windshield wipers, an important item for safe winter driving, should be inspected closely on each car. Wipers with old and rotted rubber blades should be replaced. It is not difficult to sell this item. The only effort, if you chose to call it that, comes in discovering the need for the replacement and bringing it to the customer's attention.

Tires are becoming recognized by motorists as an increasingly important safety item. A



Here is a service station in Oklahoma City, Okla., as it looks today . . . attractive and inviting to passing motorists, thanks to a new Pittco Front designed by W. H. Schumaker. Join the trend toward individualized station fronts . . . and dress up *your* station with a new Pittco Front for better business.

Why does a Pittco Front make Your Station *Individual?*

WHY are the service station fronts of today so much more attractive and productive of business than those built but a few years ago? Because, until very recently, station front design and construction were handicapped. You bought your facing material from one source, your glass from another, your metal sash and paint and incidental materials from still others. Combined, the effect of these materials was often inharmonious.

But the Pittco Front of today has changed all this. It is constructed of materials all manufactured by the Pittsburgh Plate Glass Co. Materials specifically designed to go together. Materials which combine to form a station front that's a *unit* . . . absolutely harmonious and appealing in every way.

That's why a new Pittco Front will make your station stand out from its neighbors and competitors. And that's why Pittco-remodeling almost invariably results in bigger gasoline and oil sales, better profits for you.

Send the coupon for our free book containing photographs, facts and figures on Pittco modernization. And when you remodel, remember that our staff of experts will gladly cooperate with you and your architect in planning a Pittco Front suited to your particular needs.

PITTSBURGH TIME PAYMENT PLAN

Take up to 2 years to pay for your new Pittco Front. Merely pay 20% down, then settle the balance in easy monthly installments at low F. H. A. rates.

. . .

Listen to "The Music You Love" rendered by the Pittsburgh Symphony Orchestra and distinguished guest artists every Sunday from 2 to 2:45 P. M., E. S. T., over Columbia Network and associated stations.

CARRARA STRUCTURAL GLASS
PITTCO STORE FRONT METAL
PITTSBURGH MIRRORS

PITTCO
STORE FRONTS
glass . . . metal . . . paint

PITTSBURGH PAINT PRODUCTS
POLISHED PLATE GLASS
TAPESTRY GLASS

PRODUCTS OF
Paint . PITTSBURGH . *Glass*
PLATE GLASS COMPANY

Pittsburgh Plate Glass Company,
2353B Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your new book entitled "How Modern Store Fronts Work Profit Magic."

Name.....

Street.....

City.....State.....

I am ☐ am not ☐ interested in the Pittsburgh Time Payment Plan.

few years ago new tires were purchased in the spring, the motorist feeling his old tires would carry him through the winter because the tread wear on snow covered streets was exceedingly small. Now new tires appeal to the motorist at the start of the winter season, for he realizes that a new tread on his tires will provide traction in the snow, and in addition to that, his tires will wear little through the winter and he will have practically new tires for spring.

Quick operating tire valve caps and cores can also be sold to those customers who don't like to nurse frost bitten fingers as a result of fussing with old style valve caps on cold days.

Early winter is a good season for selling oil filter cartridges. After a summer of driving, dust, dirt, and grit have usually loaded up the filter and the time is ripe for a cartridge change.

Fan belts, too, offer profit possibilities for winter conditioning sales. Particularly in cars where the generator is driven by the fan belt, it is highly important that the belt be in good condition.

Many car owners are anxious to protect the surfaces of their cars from rain, sleet, snow, and the salt solution used on many city streets. Here lies an opportunity for the sale of waxes, polishes, and polishing cloths. Many times a wash job can be sold, preceding the application of the polish. Touch-up paint should also be pushed as a surface-saving item.

In many sections of the country tire chains are a No. 1 profit item. Emergency chains, consisting of cross links which wrap around the wheel rim also offer a good turn-over.

Probably at no other season do the elements offer as much sales assistance as in winter. With the fading out of company owned stations and the increasing importance of the dealer and leased station operator, King Winter offers the oil companies an opportunity unlike any it has been able to offer heretofore.

Alert oil companies are aware of the need for close co-operation with their dealers, and the winter season presents a logical and profitable opportunity for them to assist their retail outlets through sales and merchandising help in selling winter conditioning service. The cold weather needs of the automobile give the oil company an opportunity to tie itself closer to its dealers by personalized assistance in selling winter conditioning service and supplies.

Perkins Approves Rules On U. S. Oil Bids

WASHINGTON, Nov. 9.—Secretary of Labor Perkins today approved a ruling covering exemptions for petroleum with respect to the Walsh-Healey act. The ruling was announced a week ago in NATIONAL PETROLEUM NEWS (Nov. 4, p. 10).

Contracts for petroleum products are exempted from the operation of the act only when purchased without competitive bidding, the ruling holds. The act applies when oil is to be purchased by the federal government in amounts exceeding $10,000.

In contracts for the delivery of crude oil where the contractor is a producer, the act covers the employes engaged in extracting the oil and preparing it for shipment.

In contracts for gasoline, kerosine, benzine, fuel oil and other petroleum products where the contractor is a refiner, the act applies to employes engaged in manufacturing, i.e. the employes at the refinery engaged in the refining processes and preparing the oil for shipment.

When the contractor is a dealer the act applies to employes at terminals, warehouses and bulk storage tanks including warehousemen, compounders and chemists testing the lot out of which the government order is filled, and the crews engaged in loading the material in vessels, tank cars or tank wagons for shipment.

L. B. Roberts

Production Tax Upheld

WASHINGTON, Nov. 9.—The U. S. Supreme Court today upheld the Texas civil court of appeals on a decree that oil property owners are subject to state gross production taxes on oil received as royalties under the state law of 1933.

The decision involves the suit of Joseph H. Barwise and George Thompson, Jr., trustees of the Mrs. W. M. Cook estate, against George H. Sheppard, Texas state comptroller, asking a refund of taxes paid on oil received as royalties by the estate.

L. B. Roberts Heads Socony Vacuum Ohio Division

CLEVELAND, Oct. 31.—Appointment of L. B. Roberts as Ohio district manager for the Socony-Vacuum Oil Co., Inc., has been announced by H. A. Coffin, White Star-Ohio Division manager of the company. Ohio district offices are at Cleveland. The appointment is effective Nov. 1.

Mr. Roberts has been with the Vacuum Oil Co. and the Socony-Vacuum Oil Co. for nearly 18 years. He began as salesman in Minneapolis in 1919, became Minneapolis district manager and later northwest division manager. After that he was transferred to the Ohio division.

In 1932 Mr. Roberts was appointed president of the Great Western Oil Co. of Cleveland when that company was purchased by the Vacuum. In 1933 he moved to Cincinnati as manager of the Socony-Vacuum branch in that city.

ADVERTISING PAGES REMOVED

• MARKETS •

CLEVELAND, Nov. 9

WITH colder weather spreading over much of the heaviest consuming area of the country thus speeding the seasonal decline in consumption of gasoline interest of traders in most oil markets shifted to fuel oils the first week of November. At the same time, however, it was generally agreed that consumption still was running well above a year ago.

Several local changes in crude prices, mostly upward, were made. This brought up, in some quarters, the whole question of a general advance in crude prices. While it was generally granted that competition for crude connections was keen, few observers would predict that a general advance would be made at this time. The changes made last week were mostly on crude with a relatively high heating oil yield.

Lubricating oils also were attracting considerable attention. Both Pennsylvania bright stock and neutrals were active and supplies were fairly scarce. At the same time, a better demand for Mid-Continent and South Texas neutrals tended to absorb all these oils recently offered at substantially lower prices.

Despite the fact that the seasonal decline in gasoline had set in prices generally were fairly steady. In fact East Texas gasoline was advanced 0.125 cent, recovering the reduction made the previous week. Buying of East Texas gasoline, mostly for the accounts of large companies in need of additional supplies, absorbed not only all the surplus that had accumulated but also much of the November production of most East Texas plants, reports indicated.

Most of the gasoline bought in East Texas was headed for the Gulf where it will either be reformed for shipment to the eastern seaboard or applied against export orders on hand.

Gasoline was not attracting much trade interest in the Mid-Western market. With the exception of extremely low octane gasoline from Michigan and Louisiana, however, most sellers were holding for prices prevailing the latter part of October. The volume of Michigan and Louisiana gasoline offered had not increased to any great extent, most traders reported.

Talk was heard of the possibility of gasoline backing up into the Mid-Continent and Mid-Western markets due to the seaman's strike, but since there was so little definite information available it received only a minimum of attention.

The seaman's strike probably would have a tendency to push markets higher along the eastern seaboard, since it would cause a scarcity of oil in that area. Last week, however, the strike had no effect on any of the markets as far as could be determined.

Two export cargo sales of gasoline were reported at the Gulf. One sale actually was concluded the last day of the previous week. The sale made Nov. 5 was a full cargo of 64-66, 375 e.p. gasoline for December lifting. Price paid was 5.5 cents, up 0.125 cent from the sale made two weeks ago. Specifications for the gasoline sold Oct. 31 were reported slightly better than regular specifications. Price paid was 5.5625 cents.

Domestic gasoline market at the Gulf was quiet. Some 60-64 octane was reported available at 5.75 cents, down 0.125 cent from prices asked previously.

Humble Oil & Refining Co. advanced four Texas crudes 5 cents each and posted prices at several fields where no postings previously had been made. Most other purchasers met the advance. At about the same time, Stanolind cut several Rocky Mountain crudes from 8 to 10 cents. Ohio Oil advanced western Kentucky crude 5 cents.

The sustained demand for Pennsylvania lubricating oils was attracting considerable interest among the trade. Bright stock continued to run against the usual seasonal trend. Several manufacturers were sold out to Jan. 1. Only a few were offering bright for immediate shipment. This condition was due almost entirely to the heavy buying for export, although some of it was due to the increased demand for motor oils.

Pennsylvania neutral oils were even tighter than bright stock. Practically all the neutral moving was against contract, with only a minimum of oil available for spot shipment.

The steady improvement in Mid-Continent and South Texas neutrals materialized in slightly higher prices which were announced as this is written. Virtually all the oil offered at the lower prices recently recorded apparently has been absorbed. Many refiners in those districts had refused to meet the lower prices, maintaining that they were below the cost of production.

Little change was noted in wax markets. Demand was sufficient to absorb most of the wax offered for sale. Opinion seemed to differ as to price at which wax was available, but most sales were made at around prices prevailing the past month or two.

N. P. N. Gasoline Index

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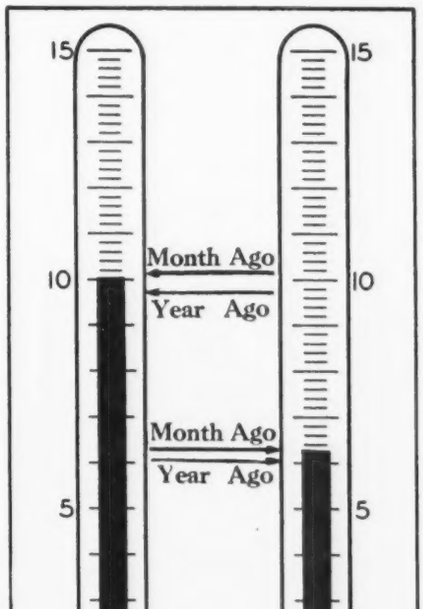


Dealer index is an average of "undivided" dealer prices, ex-tax, in 50 cities. Tank car index is a weighted average of 13 wholesale markets for regular-grade gasoline. The gasoline price index this week represents the following prices in cents per gallon:

	Dealer T.W.	Tank Car
Nov. 9	10.03	6.24
Month ago	10.13	6.27
Year ago	9.78	6.03

Mid-Continent

Gasoline Firmer

TULSA, Nov. 7

A DIRECT reversal of the East Texas gasoline trend and a crude price advance in several Texas districts were the outstanding events in the Mid-Continent market the first week of November.

Buying was more active in East Texas the past week. Approximately 800 cars were bought, taking several refiners out of the spot market for at least two weeks.

Most of this gasoline was consigned to Gulf coast refiners. It was believed some of this gasoline was to be applied on export orders already obtained. The remainder, according to reports, probably will be re-formed and shipped to the East coast. Prices paid for the 400 e.p. grade was reported to be around 4.5 to 4.625 cents f.o.b. East Texas plants.

Buying, however, was not limited to the 400 e.p. grade, but also included low octane gasoline made from a Rodessa-East Texas crude blend. Several buyers in East Texas were seeking a 375 e.p. motor fuel. Offerings of 0.25 cent above the price for 400 e.p. gasoline were made, but several refiners were holding out for a 0.375 cent differential.

Buying of gasoline for shipment to the Gulf coast was attributed to increased activity in the export and coastwise markets and to a scarcity of supplies available for immediate shipment.

With surplus gasoline off the market, prices for East Texas 400 e.p. gasoline snapped back to 4.625-cents. Markets in other districts were steadied by the East Texas buying. Some price advances were reported late in the week.

Can the crude price advance in several Texas districts the past week be construed as a forerunner of a general price advance in the Mid-Continent? This was the question uppermost in the minds of the Mid-Continent traders. Some observers of the crude situation admitted that crude connections were tight in Texas, Oklahoma and Kansas fields and that purchasers desired more of these connections. They did not, however, go so far as to predict actual price increases in the near future. Others attributed the local advances to an increased demand for a crude high in in heating oil yield.

The advance has made more observers realize that a general change in refinery operations is necessary. For years now refinery operations have been regulated in direct proportion to gasoline consumption. But with heating oil consumption on the increase, refiners realize gasoline is not the only factor that should regulate refinery runs. This point was graphically illustrated last winter when demand for heating oil made it necessary for refiners to process large quantities of crude just for its heating oil yield. The resultant gasoline stock increase and the usual spring increase in refinery runs sent motor fuel stocks to record high levels. In order to remedy this situation, refiners have suggested more uniform refinery operations over the entire year.

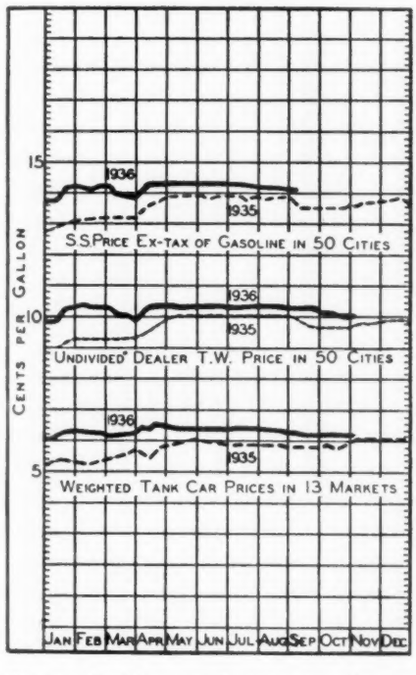
The market for kerosine was steady last week as supplies remained balanced with demand. Prices generally were unchanged, although some refiners advanced quotations 0.125 cent to the highs of the price ranges.

Volume of Mid-Continent neutral oil available at recently reduced prices was smaller. Surveys last week indicated most refiners still refused to sell 200, 250 and 280 viscosity neutrals at low prices established by some sellers almost three weeks ago. In some quarters it was believed low quotations might be advanced to the higher levels maintained by many sellers.

South Texas lubricating oils were steady to higher.

Natural gasoline was in good position last week. Prices were firmly pegged at existing levels.

Trend of Gasoline Price Index



Curve showing tank wagon price of regular grade gasoline to "undivided" dealers at 50 cities has been added to the trend curve of the N.P.N. Gasoline Index because of the spread of the Iowa Plan making it difficult to obtain actual retail prices

California

Market Unsettled

LOS ANGELES, Nov. 6

PACIFIC Coast petroleum markets the past week reflected the feeling of uncertainty as to the probable effect of the existing marine strike. So far, tanker transportation had not become involved in the dispute but the probability appeared that, unless quickly settled, the strike would spread to include all water traffic.

No important changes were made in seaboard quotations, either for export or for ships' bunkers, and none was anticipated. Neither were any changes in domestic quotations looked for as a result of the strike, because present prices of refined products are closely related to the high cost of crude oil, which was not likely to be affected by the marine crisis. Elements of danger to the price structure, however, were recognized especially if the backing up of refined products at refinery centers were to be accompanied by an increase in the output of unbranded gasoline.

Recent investigations of the wholesale and retail market situation in the Los Angeles Basin showed that, generally, bulk prices were somewhat firmer but that the area of low retail prices was constantly increasing. Marketing officials, however, were optimistic and believed that the refined price structure was not at present in danger.

With the exception of the output of three independent refineries, all third grade and competitive brands of gasoline were quoted at 13 cents a gallon, inclusive of 4 cents tax, for tank wagon deliveries in the Basin area. Of the three refineries supplying low priced products, one was considered a seriously disturbing factor in the Basin, as it was increasing the volume of its output and the number of its outlets. It quoted 11.5 cents a gallon for unbranded gasoline at the refinery rack. The same figure was quoted for rack deliveries of the Gulf Coast gasoline recently brought into the Los Angeles market.

Kerosine and kerosine distillate were moderately firm, with no changes in quotations. Kerosine distillate ranged from 2.75 to 3.25 cents a gallon, with little available at less than 3 cents. Kerosine quotations ranged from 4 to 5 cents a gallon. Independent refineries that have been the source of supply of low priced kerosine in the past were out of the market and out of state buyers that had contracts with them for this product were reported unable to get deliveries.

Diesel and fuel oil quotations were unchanged, although the seasonal demand for these products was some-

what below anticipations. Some tendency was seen toward lower levels for diesel oil, as well as for bunker fuel oil. Diesel above 23.9 gravity, in cargo lots, was quoted at $1.00—$1.15 a barrel; for 23.9 and below, the range was $0.95—$1.10 a barrel. Fuel oil was quoted at $0.75—$0.90 in cargo lots and at $0.90—$0.95 for ships bunkers.

Export markets were quiet and offshore tanker shipments for the week were low, partly as a result of the large coastal and intercoastal movements made during the past two months in anticipation of the ship tie-up.

Pennsylvania

U. S. Motor Lower

CLEVELAND, Nov. 7

WHILE the only definite change noted in prices in the Pennsylvania market the first week of November was a reduction in U. S. Motor gasoline, prices of virtually all other products were steady to higher. Demand for lubricating oils continued active and some refiners, not having oil available for immediate shipment, withdrew from the spot market.

Fuel oil and kerosine, particularly the former, were getting considerable play, although furnace oil blends of the two probably was getting the most attention from the trade. Kerosine prices were pointing higher, but as the week ended 45 water white still was available at 4.75 cents.

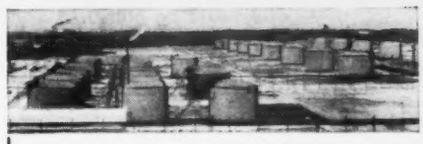
U. S. Motor gasoline prices were reduced 0.125 cent to 5.5 cents despite its relatively good inventory position. Apparently competition for existing business was so keen that refiners were forced to cut their prices to obtain orders. In any event, the reduction apparently did not indicate that there was any material that could be classed as "distress."

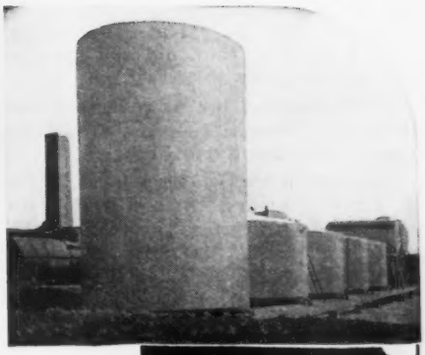
Despite the reduction in U. S. Motor, the higher octanes remained in fairly good position. Many buyers were taking a larger percentage of the higher octanes instead of buying third grade. With consumption running well ahead of a year ago, most traders were rather optimistic about the outlook for the better grades of gasoline.

Offerings of neutral oils became scarcer as demand continued active. Several refiners were reported sold up for the remainder of the year. There was very little oil available for spot shipment. In some instances, buyers were having to look around in order to obtain their requirements.

Bright stock was almost as scarce as neutrals. Export demand combined with the demand for bright in blended motor oils was taking at least all current production, most reports

GENERAL STEEL PLATE CONSTRUCTION
GRAVER TANKS
WATER CONDITIONING EQUIPMENT





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indicated. Many refiners had more orders than they could take care of in November, and a few of these reported they would not have any available for spot shipment until after Jan. 1 even if they did not receive any orders prior to that time.

With demand for bright stock active, 600 steam refined was firm. Prices were steady to higher.

Interest in wax was reported better in some quarters. Prices paid were comparable to prices prevailing the past few weeks. Supplies generally were about even with demand.

Wax

Scale Quiet

NEW YORK, Nov. 7.—No particular change was noted in crude scale wax markets during the week ended Nov. 7 with a general quiet prevailing. Some suppliers reported a fair demand while others said open market movement was quite light.

Prices for white scale showed no change with quotations mostly at 2.40 to 2.50 cents. Several traders said that only small lots could be obtained as low as 2.40 cents and that at least 2.45 cents a pound would have to be paid for lots of around 50 tons or more. Others said that fair sized quantities were obtainable at 2.40 cents.

Refined wax markets also were rather dull. No changes were reported in prices.

Coastal

Export Cargoes Sold

NEW YORK, Nov. 7

ACTIVITY in export cargo markets featured the Gulf Coast district the past week, although some products also were in demand for domestic movement.

Actual sales in the export market were confined to one cargo of gasoline sold during the week and reports of one sold the last day of the previous week. On Nov. 5, a full cargo of 64-66, 375 e.p. gasoline was sold for export lifting in December at 5.5 cents a gallon, f.o.b. the Gulf. On Oct. 31, a full cargo of gasoline was sold for November lifting at 5.5625 cents, f.o.b. the Gulf. The latter cargo varied in its specifications from the regular export 64-66 grade, it was reported.

Prior to these sales, the last cargo of 64-66, e.p. gasoline for regular export shipment moved at 5.375 cents, but traders said that no more was available at this price. A French refiner was inquiring late in the week for a cargo of this grade of gasoline for January-February lifting and indications were that 5.5 cents were the lowest quotation he had received.

Gas oil at the Gulf rose approximately 0.125 cent during the week, whether for export or domestic shipment. An export inquiry for a cargo of 30 plus transulcent gas oil at 3.125 cents failed to find an offer at that figure, it was reported. Reports were that 3.25 cents was the minimum at which these oils could be obtained and that no full specification No. 2 oil was available in cargo lots at under 3.5 cents, f.o.b. the Gulf.

Domestic gasoline markets were quiet at the Gulf. Some 60 to 64 octane was reported available at 5.75 cents compared to a minimum of 5.875 cents which had been quoted. Cargoes were not freely available, however, traders said and there seemed to be little pressure from the selling end.

Eastern

Tank Car Gasoline Quiet

NEW YORK, Nov. 7

TANK car gasoline markets were quiet at eastern terminals during the past week, according to trade reports. Demand held steady for the season and prices were unchanged. Some reports of price shading were heard, particularly in the Baltimore area, but these could not be confirmed.

One of the most important moves during the week was a change in its commercial consumer discount sales schedule by the Standard Oil Co. of New Jersey. However, the announcement of the change came too late in the week to have any affect on the market.

The new schedule, effective retroactive to Nov. 2, allows discounts based on purchases at time of delivery regardless of the total amount purchased during a yearly period as in the old schedule. The new schedule also gives the same discounts to non-contracted consumers as it does to contracted accounts, whereas under the old schedule the contract accounts were favored. (See Standard of New Jersey tank wagon table for new commercial schedule.)

The strike in the shipping industry, which has caused a tieup of some tankers and delay in the sailings of others, has as yet had no bearing on petroleum markets, traders reported. However, a complete tieup for a week or so would have a definite bearing on these markets and probably would cause prices to rise and possibly bring a shortage of oil along the seaboard, some traders believed.

Chicago

Trading Quiet

CHICAGO, Nov. 7

MILD disinterest, easy prices, a lack of buying, and a bullish sentiment in some quarters, sums up conditions in the Mid-Western gasoline market the first week of November.

Resellers were not active gasoline traders, putting their efforts in fuel oil, where a lively market held forth. Other sellers indicated they were expending sales effort on gasoline.

Reports from buyers in the middle west last week indicated that low octane gasoline, originating in Louisiana and Michigan, was freely available at under published lows. However, these extremely low octane gasolines were not generally considered representative third grade. Offerings of occasional cars of full specification gasoline at shaded prices were encountered.

Open market gasoline buying was relatively slow at the beginning of the month, and continued so throughout last week's trading period.

According to reports from jobbers in the territory the normal seasonal decline in gasoline consumption has set in. The decline has been aided by adverse weather over portions of the middle west. However virtually all jobbers agreed that retail volume of gasoline this year is still considerably above a year ago.

Sellers here were at loss to reconcile the apparent lack of open-market market demand with the continued high rate of gasoline consumption.

Balancing bearish sentiment in the market were continued reports of large-scale gasoline buying in East Texas. Several reports place the number of cars bought in this district at around 800.

While this large-company buying may have served to check a decline in prices, little or no effect was discernible in the market here.

While many traders refused to comment on the possibility of gasoline backing up into the middle west due to the seamen's strike at the Gulf, nevertheless, the condition was not escaping attention here.

Kerosine prices moved higher in the Mid-Western market last week. Reports still indicate that the greater portion of current kerosine production was moving, in the middle west at least, as fuel for range burners. The advance was the result of a comparative scarcity of this product. Higher prices did not result in an increase in offerings, according to reports.

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Inter-refinery and export sales not included. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Gasoline *and* Naphtha

Oklahoma	**Nov. 9**	**Nov. 2**	**Oct. 26**
48-54, 450 e.p. naphtha	*4.50 – 4.75	*4.50 – 4.75	*4.50 – 4.75
U. S. Motor gasoline, by octane numbers:			
62 octane and below..	4.625– 4.75	4.625– 4.75	4.625– 4.75
63-67 octane.....	5.00 – 5.375	5.00 – 5.375	5.00 – 5.375
68-70 octane (regular).	5.625– 5.75	5.625– 5.75	5.625– 5.75
60-62, 400 e.p. gasoline	4.625– 4.75	4.625– 4.75	4.625– 4.75
64-66, 375 e.p. gasoline	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
68-70, 350-360 e.p. gasoline.....	*5.00 – 5.25	*5.00 – 5.25	*5.00 – 5.25

*Nominal.

Western Penna. (Quotations and/or sales prices to car unloaders)

Bradford-Warren:			
52-54 naphtha.....	5.375– 5.50	5.50 – 5.625	5.50 – 5.625
Motor gasoline:			
U.S. Motor (58-62°)	5.50 – 5.625	5.625– 5.75	5.625– 5.75
Minimum 60 octane	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Minimum 65 octane	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.75 – 5.875	5.875– 6.00	5.875– 6.00
68-70, 350-360 e.p. gasoline.....	6.00 – 6.125	6.125– 6.25	6.125– 6.25
Other districts:			
52-54 naphtha.....	5.375– 5.50	5.50 – 5.625	5.50 – 5.625
54-56 naphtha.....	5.50 – 5.625	5.625– 5.75	5.625– 5.75
Motor gasoline:			
U.S. Motor (58-62°)	5.50 – 5.625	5.625– 5.75	5.625– 5.75
Minimum 60 octane	7.00 – 7.125	7.00 – 7.125	7.00 – 7.125
Minimum 65 octane	7.25 – 7.375	7.25 – 7.375	7.25 – 7.375
Minimum 70 octane	.....	.....	.....
64-66, 390 e.p. gasoline	5.75 – 5.875	5.875– 6.00	5.875– 6.00
68-70, 350-360 e.p. gasoline.....	6.00 – 6.125	6.125– 6.25	6.125– 6.25

California (3c tax to be added to prices if used in state)

54-58 U.S. Motor, 437 e.p. for in-state shipment.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
54-58 U.S. Motor, 437 e.p. for outside state shipment.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
58-61, 375-400 e.p. gasoline, 65 octane and above.....	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00

†***North Texas*** (F.o.b. Wichita Falls district for shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments)[8]

U. S. Motor gasoline, by octane numbers:			
62 octane and below..	4.625– 4.75	4.625– 4.75	4.625– 4.75
63-67 octane.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
68-70 octane (regular)	5.625– 5.75	5.625– 5.75	5.625– 5.75
60-62, 400 e.p. gasoline	4.75	4.75	4.75
64-66, 375 e.p. gasoline	4.875– 5.00	4.875– 5.00	4.875– 5.00
68-70, 350-360 e.p. gasoline.....	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125

Kansas (F.o.b. refinery, Kansas destination)

U. S. Motor gasoline, by octane numbers:			
62 octane and below..	4.875– 5.00	4.875– 5.00	4.875– 5.00
63-67 octane.....	*	*	*
68-70 octane (regular).	5.875– 6.00	5.875– 6.00	5.875– 6.00
60-62, 400 e.p. gasoline	4.875– 5.00	4.875– 5.00	4.875– 5.00

*This price discontinued due to thinness of open market sales.

†***West Texas and New Mexico*** (F.o.b. W. Texas and N. Mex refineries for unrestricted shipment)

U. S. Motor gasoline, by octane numbers:			
62 octane and below..	4.625– 4.75	4.625– 4.75	4.625– 4.75
63-67 octane.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
68-70 octane (regular)	5.625– 5.75	5.625– 5.75	5.625– 5.75

†***East Texas*** (F.o.b. East Texas refinery for unrestricted shipment)

U. S. Motor gasoline, by octane numbers:			
62 octane and below..	*4.50 – 4.625	*4.50	*4.625
60-62, 400 e.p. gasoline	*4.625	*4.50 – 4.625	4.625– 4.75

*Nominal.

North Louisiana (For Louisiana and Arkansas destination)

U. S. Motor gasoline:			
62 octane and below..	5.50	5.50	5.50
63-67 octane.....	6.25	6.25	6.25
68-70 octane (regular).	6.50	6.50	6.50

†Refiners generally receive from 0.25c to 0.5c per gallon more for gasoline and kerosine for local or differential territory shipment.

	Nov. 9	**Nov. 2**	**Oct. 26**
Arkansas (For Arkansas and Louisiana destination)			
U. S. Motor Gasoline:			
62 octane and below..	5.50	5.50	5.50
63-67 octane.....	6.25	6.25	6.25
68-70 octane (regular).	6.50	6.50	6.50
Ohio (Quotations of S. O. Ohio. Delivered any point in Ohio).			
U.S. Motor gasoline..	8.375	8.375	8.375
Above 65 octane no.	8.625	8.625	8.625

Natural Gasoline

(Prices shown f.o.b. Group 3 and Breckenridge represent majority of sales made on dates shown to blenders on the freight basis shown below, although shipments may originate in other manufacturing districts, such as East Texas, Panhandle, Southwest Texas or Kansas).

F.o.b. Group 3			
Grade 26-70.....	4.50	4.50	4.50
F.o.b. Breckenridge			
Grade 26-70.....	4.25	4.25	4.25
California (F.o.b. plants in Los Angeles basin)			
75-85, 375-390 e.p. for blending.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00

Kerosine

Western Penna. (Quotations and/or sales prices to car unloaders)

Bradford-Warren:			
45 w.w. kerosine.....	4.75 – 4.875	4.75 – 4.875	4.75 – 4.875
46 w.w. kerosine.....	4.875– 5.00	4.875– 5.00	4.875– 5.00
47 w.w. kerosine.....	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
Other districts:			
45 w.w. kerosine.....	4.75 – 4.875	4.75 – 4.875	4.75 – 4.875
46 w.w. kerosine.....	4.875– 5.00	4.875– 5.00	4.875– 5.00
47 w.w. kerosine.....	5.00 – 5.125	5.00 – 5.125	5.00 – 5.125
Oklahoma			
41-43 w.w. kerosine...	3.375– 3.50	3.375– 3.50	3.25 – 3.375
42-44 w.w. kerosine...	3.50 – 3.625	3.50 – 3.625	3.375– 3.50
Kansas (F.o.b. refinery Kansas destination)			
41-43 w.w. kerosine...	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
42-44 w.w. kerosine...	3.625– 3.75	3.625– 3.75	3.625– 3.75

†***North Texas*** (F.o.b. Wichita Falls district or shipment to Texas and New Mexico destinations; Group 3 prices quoted on northern shipments)

41-43 w.w. kerosine...	3.50	3.50	3.375– 3.50

†***East Texas*** (F.o.b. East Texas refinery for unrestricted shipment)

41-43 w.w. kerosine...	*3.375	*3.375	*3.25 – 3.375

*Nominal.

North Louisiana (For Louisiana and Arkansas destination)

41-43 w.w. kerosine...	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875

Arkansas (For Arkansas and Louisiana destination)

41-43 w.w. kerosine...	*4.00 – 4.25	*4.00 – 4.25	*4.00 – 4.25

*Only one refiner quoting.

California (F.o.b. California refineries)

38-40 w.w. kerosine...	4.00 – 5.00	4.00 – 5.00	4.00 – 5.00

Gas *and* Fuel Oils

Western Penna. (Quotations and/or sales prices to car unloaders.

Bradford-Warren:			
36-40 fuel oil.....	4.50 – 4.625	4.50 – 4.625	4.375– 4.50
Other districts: (Excluding Pittsburgh District Prices)			
36-40 fuel oil.....	4.50 – 4.625	4.50 – 4.625	4.375– 4.50
Oklahoma (F.o.b. Oklahoma refineries)			
No. 1 white fuel oil...	3.375	3.375	3.25 – 3.375
No. 1 straw fuel oil...	3.25 – 3.375	3.25 – 3.375	3.125– 3.375
No. 2 straw fuel oil...	3.25	3.25	3.125– 3.25
No. 2 dark fuel oil....	3.125– 3.25	3.125– 3.25	3.00 – 3.25
U. G. I. gas oil.....	2.50 – 2.625	2.625	2.625

(*Continued on next page*)

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Inter-refinery and export sales not included. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Oklahoma (cont'd)

	Nov. 9	Nov. 2	Oct. 26
Fuel Oils: (Prices per barrel of 42 U.S. gallons)			
28-30 zero	3.00 – 3.125	3.00 – 3.125	2.875– 3.125
28-30	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
24-26	$0.75 –$0.775	$0.75 –$0.775	$0.75 –$0.80
18-22	$0.725–$0.775	$0.725–$0.775	$0.725–$0.775
14-16	$0.625–$0.65	$0.625–$0.65	$0.625–$0.65
Kansas (F.o.b. refinery, Kansas destination)			
No. 1 p.w., fuel oil	3.625– 3.75	3.50 – 3.625	3.50 – 3.625
18-22 fuel oil (per bbl.)	$0.75 –$0.80	$0.75 –$0.80	$0.75 –$0.80
10-14 fuel oil (per bbl.)	$0.725–$0.75	$0.725–$0.75	$0.725–$0.75
North Texas (F.o.b. Wichita Falls district for shipment to Texas and New Mexico; Group 3 prices quoted on northern shipments).			
No. 1 straw, fuel oil	3.25 – 3.375	3.25 – 3.375	†3.125– 3.375
No. 1 white, fuel oil	3.375– 3.50	3.375– 3.50	3.25 – 3.50
U.G.I. gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
No. 2 fuel oil	*3.25	*3.25	†*3.125– 3.25
24-26 fuel oil (per bbl.)	$0.70 –$0.725	$0.675–$0.70	$0.675–$0.70
18-22 fuel oil (per bbl.)	$0.625–$0.65	$0.60 –$0.65	$0.60 –$0.65

*Nominal.

†Correction: These prices correct for Oct. 26 instead of prices published on page 66 of Oct. 28 issue.

West Texas (F.o.b. West Texas refineries for unrestricted shipment).			
No. 2 fuel oil	*3.125– 3.25	*3.125– 3.25	*3.00 – 3.125
18-22 fuel oil (per bbl.)	$0.675–$0.70	$0.675–$0.70	$0.675–$0.70

*Nominal.

East Texas (F.o.b. East Texas refineries for unrestricted shipment).			
No. 1 white, fuel oil	*3.25 – 3.375	*3.25 – 3.375	*3.125– 3.25
U.G.I. gas oil	2.50 – 2.625	2.50 – 2.625	2.50
No. 2 fuel oil	*3.125– 3.25	*3.125– 3.25	*3.00
24-26 fuel oil (per bbl.)	$0.65 –$0.675	$0.65 –$0.675	$0.65 –$0.675
20-24 fuel oil (per bbl.)	$0.65	$0.65	$0.65

*Nominal.

North Louisiana (For Louisiana and Arkansas destination).			
No. 2 fuel oil	3.125– 3.25	3.125– 3.25	3.00 – 3.125
U.G.I. gas oil	2.625	2.625	2.625
20-24 fuel oil (per bbl.)	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
16-20 fuel oil (per bbl.)	$0.95 –$1.00	$0.95 –$1.00	$0.95 –$1.00
10-14 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Arkansas (For Arkansas and Louisiana destination).			
No. 2 fuel oil	3.25	3.25	3.25
28-30 gas oil, zero	*3.00	*3.00	*3.00
20-24 fuel oil (per bbl.)	$0.825–$0.875	$0.825–$0.875	$0.825–$0.875
16-20 fuel oil (per bbl.)	$0.725–$0.775	$0.725–$0.775	$0.725–$0.775
10-14 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65

*Only one refiner quoting.

California			
San Joaquin Valley, per bbl.:			
Grade C fuel oil	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Diesel fuel oil	$0.95 –$1.47	$0.95 –$1.47	$0.95 –$1.47
Stove distillate	$1.25 –$1.89	$1.20 –$1.89	$1.20 –$1.89
Los Angeles, per bbl.:			
Grade C fuel oil	$0.70 –$0.95	$0.70 –$0.95	$0.70 –$0.95
Diesel fuel	$0.95 –$1.47	$0.95 –$1.47	$0.95 –$1.47
Stove distillate	$1.20 –$1.89	$1.25 –$1.89	$1.20 –$1.89
San Francisco, per bbl.:			
Grade C fuel oil	$1.00	$1.00	$1.00
Diesel fuel	$1.68	$1.68	$1.68
Stove distillate	$2.10	$2.10	$2.10

Neutral Oils

Western Penna. (Quotations and/or sales prices to car unloaders)

Viscous Neutrals (Viscosity at 70° F.)

200 Vis. (180 at 100°) No. 3 color, 420-425 flash:			
0 pour test	24.50 –25.00	24.50 –25.00	24.50 –25.00
10 pour test	23.50 –24.00	23.50 –24.00	23.50 –24.00
15 pour test	23.00 –23.50	23.00 –23.50	23.00 –23.50
25 pour test	22.00 –22.50	22.00 –22.50	22.00 –22.50
180 Vis. (165 at 100) No. 3 color, 410-415 flash:			
25 pour test	21.00 –21.50	21.00 –21.50	21.00 –21.50
150 Vis. (143 at 100) No. 3 color, 400-405 flash:			
0 pour test	21.00 –21.50	21.00 –21.50	21.00 –21.50
10 pour test	20.00 –20.50	20.00 –20.50	20.00 –20.50
15 pour test	19.50 –20.00	19.50 –20.00	19.50 –20.00
25 pour test	18.50 –19.00	18.50 –19.00	18.50 –19.00

South Texas (F.o.b. South Texas refineries, for domestic shipment)

Vis. Color			
Pale Oils:	(*Viscosity at 100° F.; pour test 0*)		
100 No. 1½-2½	5.00	4.50 – 5.00	4.50 – 5.00
200 No. 2-3	7.00	6.50 – 7.00	6.50 – 7.00
300 No. 2-3	7.50	7.00 – 7.50	7.00 – 7.50
500 No. 2½-3½	8.50	8.00 – 8.50	8.00 – 8.50
750 No. 3-4	9.00	8.50 – 9.00	8.50 – 9.00
1200 No. 3-4	9.50	9.00 – 9.50	9.00 – 9.50
2000 No. 4	10.00	9.25 –10.00	9.25 –10.00
Red Oils:			
200 No. 5-6	7.00	6.50 – 7.00	6.50 – 7.00
300 No. 5-6	7.50	7.00 – 7.50	7.00 – 7.50
500 No. 5-6	8.50	8.00 – 8.50	8.00 – 8.50
750 No. 5-6	9.00	8.50 – 9.00	8.50 – 9.00
1200 No. 5-6	9.50	9.00 – 9.50	9.00 – 9.50
2000 No. 5-6	10.00	9.25 –10.00	9 25 –10.00

Note: South Texas red oil prices shown above cover oils with green cast; blue cast red oils are slightly lower in some cases.

Mid-Continent (Viscosity at 100° F.; F.o.b. Tulsa basis. Prices represent majority of quotations)

0 to 10 Pour Point:			
Pale Oils			
Vis. Color			
60-85—No. 2	5.25	5.25	5.25
86-110—No. 2	5.75	5.75	5.75
150—No. 3	8.50	8.50	8.50
180—No. 3	9.50	9.50	9.50
200—No. 3	10.00	8.00 –10.00	8.00 –10.00
250—No. 3	11.00	9.00 –11.00	9.00 –11.00
280—No. 3	12.00	11.00 –12.00	11.00 –12.00
300—No. 3	12.50	12.50	12.50
Red Oils:			
180—No. 5	8.50	8.50	8.50
200—No. 5	9.00	7.00 – 9.00	7.00 – 9.00
250—No. 5	10.00	8.00 –10.00	8.00 –10.00
280—No. 5	11.00	10.00 –11.00	10.00 –11.00
300—No. 5	11.25	11.25	11.25

Note: Viscous and non-viscous oils, 15 to 25 pour point are generally quoted 0.5c under 0 to 10 pour point oils. Viscous oils (150-300 vis.), No. 4 color, are generally quoted 0 5c above No. 5 color oils.

Chicago (F.o.b. Chicago District refineries) (Vis. at 100° F.)

Pale Oils, *15 to 30 pour point:			
Vis. Color			
60-85—No. 2	6.50	6.50	6.50
86-110—No. 2	7.00	7.00	7.00
150—No. 3	7.50	7.50	7.50
180—No. 3	8.00	8.00	8.00
200—No. 3	8.50	8.50	8.50
250—No. 3	9.50	9.50	9.50
Red Oils, *15 to 30 Pour Point:			
180—No. 5	7.50	7.50	7.50
200—No. 5	7.50	7.50	7.50
250—No. 5	8.50	8.50	8.50
280—No. 5	10.50	10.50	10.50
300—No. 5	11.00	11.00	11.00

*Oils with 0-10 pour point are quoted at 0.5c higher. To obtain prices delivered in Chicago add 0.25c per gal.

California (F.o.b. California refineries; Viscosity at 100° F.)

Neutral oils not now being quoted.

Cylinder Stocks

Mid-Continent (F.o.b. Tulsa basis. Prices represent quotations and sales).

Bright Stocks:			
190-200 Vis. at 210° D	20.00	20.00	20.00
150-160 Vis. at 210° D:			
0 to 10 pour test	17.00	17.00	17.00
10 to 25 pour test	16.50	16.50	16.50
25 to 40 pour test	16.00	16.00	16.00
150-160 Vis. at 210° E	16.00	16.00	16.00
120 Vis. at 210° D:			
0 to 10 pour test	16.00	16.00	16.00
10 to 25 pour test	15.50	15.50	15.50
25 to 40 pour test	15.00	15.00	15.00
600 Stm. Rfd. Dark Green	5.00 – 5.75	5.50 – 6.00	5.50 – 6.00
600 Stm. Rfd. Olive Green	6.50 – 7.50	6.75 – 8.00	6.75 – 8.00
631 Steam Refined	*13.00	*13.00	*13.00
Black Oil	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375

*Only one refiner quoting.

Chicago (F.o.b. Chicago district refineries) (Viscosity at 210°)

Unfiltered Steam Refined:			
140	9.00	9.00	9.00
160	10.00	10.00	10.00
200	11.00	11.00	11.00
Bright stocks, 160 vis. at 210 No. 8 color:			
0 to 10 pour point	18.75	18.75	*18.75
15 to 25 pour point	18.25	18.25	*18.25
30 to 40 pour point	17.75	17.75	*17.75
E filtered Cyl. Stock	14.50	14.50	14.50

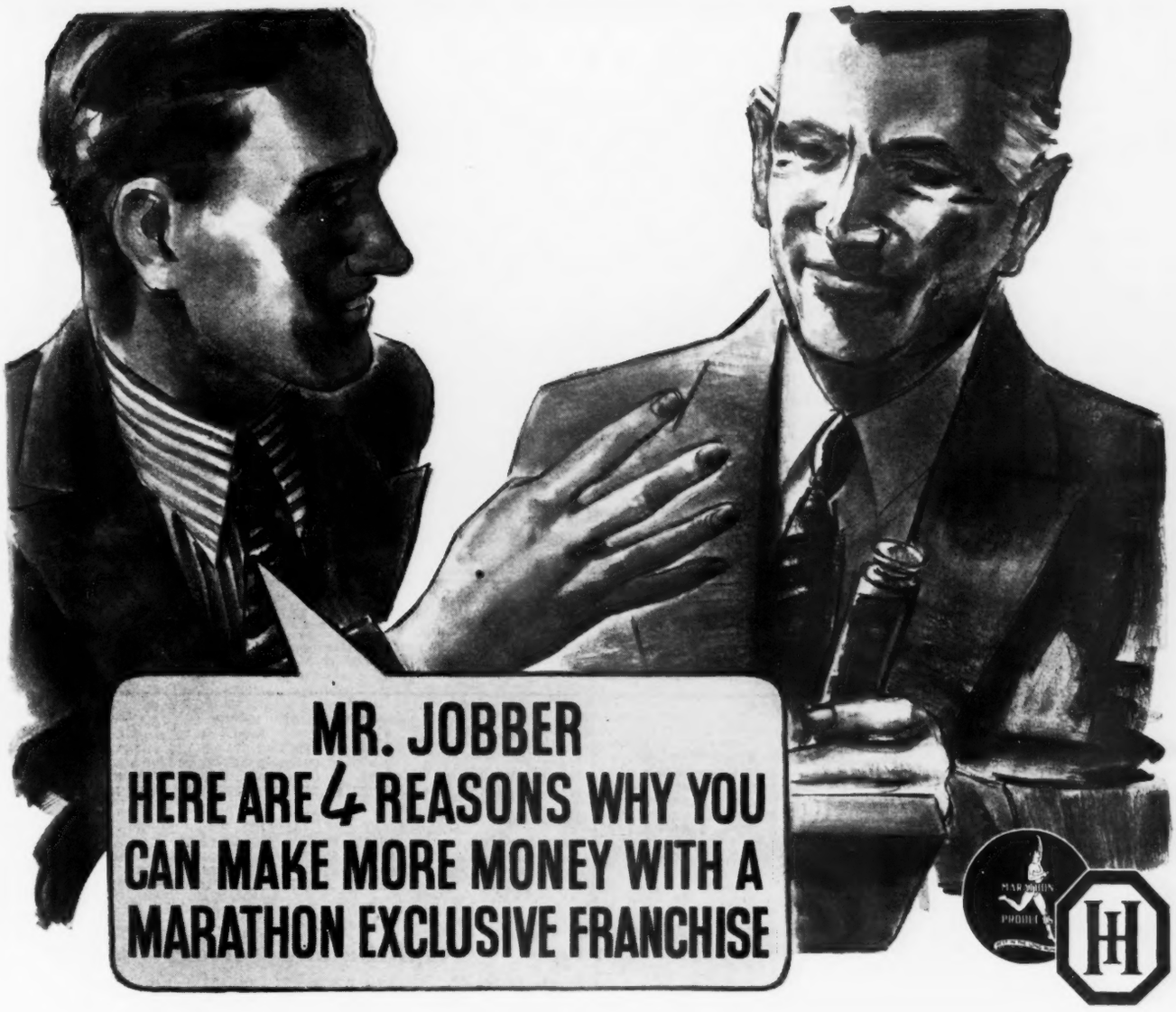
To obtain prices delivered in Chicago, add 0.25c per gal.

*Correction: These prices in effect since Oct. 12, instead of prices published on page 66 of Oct. 28 issue, page 88 of Oct. 21 issue and page 66 of Oct. 14 issue.

Western Penna. (A.S.T.M. tests; quotations and/or sales prices to car unloaders)

600 stm. rfd. filterable	12.50 –13.00	12.50 –13.00	12.50 –13.00
650 steam refined	14.00 –14.50	14.00 –14.50	14.00 –14.50

(*Continued on page 68*)



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MARATHON PRODUCTS

REFINERY TANK CAR MARKETS

Prices in cents per gallon, tank car lots, except where otherwise noted. Inter-refinery and export sales not included. Federal, state or municipal taxes not included. Prices quoted apply on products made from legally produced crude.

Cylinder Stocks (cont'd)

Western Pennsylvania (cont'd)

	Nov. 9	Nov. 2	Oct. 26
600 flash	15.00 -15.50	15.00 -15.50	15.00 -15.50
630 flash	17.00 -17.50	17.00 -17.50	17.00 -17.50
600 Warren E	16.00 -16.50	16.00 -16.50	16.00 -16.50
Bright stock, 145-155 vis. at 210°, 540-550 flash, No. 8 color:			
10 pour test	23.50 -24.00	23.50 -24.00	23.50 -24.00
15 pour test	22.50 -23.00	22.50 -23.00	22.50 -23.00
20 pour test	21.50 -22.00	21.50 -22.00	21.50 -22.00
25 pour test	20.50 -21.00	20.50 -21.00	20.50 -21.00

Petrolatums

Western Penna. (Per pound, in barrels, carload lots, f.o.b. Penna. refinery. In tank cars, 0.5c per pound less. Quotations are from majority of petrolatum makers).

Snow White	6.625	6.625	6.625
Lily White	5.625	5.625	5.625
Cream White	4.625	4.625	4.625
Light Amber	2.75	2.75	2.75
Amber	2.50	2.50	2.50
Red	2.00 - 2.125	2.00 - 2.125	2.00 - 2.125

Wax

Western Penna. (Per pound, f.o.b. New York)	Nov. 9	Nov. 2	Oct. 26
122-124 wh. crude scale, A.m.p.	2.40 - 2.45	2.40 - 2.45	2.40 - 2.45
124-126 wh. crude scale, A.m.p.	2.45 - 2.50	2.45 - 2.50	2.45 - 2.50

Oklahoma (Per pound in barrels; in a few instances, per pound in burlap bags; f.o.b. Oklahoma refineries)

124-126 wh. crude scale, A.m.p.	2.625	2.60 - 2.625	2.50 - 2.625

Chicago (F.o.b. Chicago district refineries, in cents per pound, in bags, carload lots. Melting points are E.M.P. (A.S.T.M.) methods; add 3° F. to convert into A.m.p.)

Fully refined:			
122-124	4.65 - 4.75	4.65 - 4.75	4.65 - 4.75
125-127	4.90 - 5.00	4.90 - 5.00	4.90 - 5.00
127-129	5.05 - 5.15	5.05 - 5.15	5.05 - 5.15
130-132	*5.45 - 5.55	*5.45 - 5.55	*5.45 - 5.55
132-134	*5.70 - 5.80	*5.70 - 5.80	*5.70 - 5.80
135-137	*6.45 - 6.55	*6.45 - 6.55	*6.45 - 6.55

*Same prices quoted in bags or slabs loose.

MID-WESTERN TANK CAR MARKETS

Prices in cents per gallon, except where otherwise noted, in tank car lots, representing majority of sales made by Chicago sellers, from legally produced crude to jobbers on Group 3 (Oklahoma) freight basis, although shipments may originate in other South-western or Mid-western refining districts. Prices do not include state or federal taxes.

Gasoline

U. S. Motor gasoline:	Nov. 9	Nov. 2	Oct. 26
62 octane and below	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75
63-67 octane	4.75 - 5.25	4.75 - 5.25	4.875- 5.25
68-70 octane (regular)	5.375- 5.625	5.375- 5.625	5.375- 5.625
60-62, 400 e.p.	4.50 - 4.75	4.50 - 4.75	4.625- 4.75
64-66, 375 e.p.	5.00 - 5.125	5.00 - 5.125	5.00 - 5.125
68-70, 350-360 e.p.	5.125- 5.25	5.125- 5.25	5.125- 5.25

Kerosine

41-43 w.w.	3.375- 3.50	3.25 - 3.375	3.25 - 3.375
42-44 w.w.	3.50 - 3.625	3.375- 3.50	3.375- 3.50

Fuel *and* Gas Oils

Domestic:			
No. 1 prime white	3.375- 3.50	3.25 - 3.375	3.25 - 3.375
No. 1 straw	3.25 - 3.375	3.125- 3.25	3.125- 3.25

	Nov. 9	Nov. 2	Oct. 26
No. 2 straw	3.125- 3.25	3.00 - 3.125	3.00 - 3.125
No. 2 dark	3.00 - 3.125	2.875- 3.125	2.875- 3.125
No. 3	2.875- 3.00	2.875- 3.00	2.875- 3.00
No. 4 (per bbl.)	$0.95 -$1.00	$0.95 -$1.00	$0.95 -$1.00
No. 5 (per bbl.)	$0.725-$0.75	$0.725-$0.75	$0.725-$0.75
Industrial:			
No. 4 (per bbl.)	$0.85 -$0.90	$0.85 -$0.90	$0.85 -$0.90
No. 5 (per bbl.)	$0.65 -$0.675	$0.65 -$0.675	$0.65 -$0.675
No. 6 (per bbl.)	$0.575-$0.60	$0.575-$0.60	$0.575-$0.60
U.G.I. gas oil	2.50 - 2.625	2.50 - 2.625	2.50 - 2.625

Naphtha *and* Solvent

Stoddard solvent	6.875	6.875	6.875
V. M. & P. naphtha	7.375	7.375	7.375
Cleaners' naphtha	7.375	7.375	7.375
Mineral spirits	6.375	6.375	6.375
Rubber solvent	7.375	7.375	7.375
Lacquer diluent	8.375	8.375	8.375

DAILY GASOLINE PRICES

Daily range of gasoline prices (cents per gallon) in tank cars, as reported in PLATT'S OILGRAM, (Week Ended Nov. 6, 1936)

U. S. Motor, 62 octane and below:	Nov. 2	Nov. 3	Nov. 4	Nov. 5	Nov. 6
East Texas	†4.50	†4.50	†4.50 - 4.625	†4.50 - 4.625	†4.50 - 4.625
*North Texas	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75
West Texas	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75
Oklahoma	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75	4.625- 4.75
Mid-Western (Group 3 basis)	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75
U. S. Motor, 63-67 octane:					
*North Texas	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
West Texas	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25	5.00 - 5.25
Oklahoma	5.00 - 5.375	5.00 - 5.375	5.00 - 5.375	5.00 - 5.375	5.00 - 5.375
Mid-Western (Group 3 basis)	4.75 - 5.25	4.75 - 5.25	4.75 - 5.25	4.75 - 5.25	4.75 - 5.25
U. S. Motor, 68-70 octane (regular):					
*North Texas	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75
West Texas	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75
Oklahoma	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.625- 5.75
Mid-Western (Group 3 basis)	5.375- 5.625	5.375- 5.625	5.375- 5.625	5.375- 5.625	5.375- 5.625
Motor Gasoline, 60-64 octane					
New York harbor	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50	6.25 - 6.50
Philadelphia district	6.50	6.50	6.50	6.50	6.50
Baltimore district	6.50	6.50	6.50	6.50	6.50
Motor Gasoline, 65 octane & above					
New York harbor	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75
Philadelphia district	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75
Baltimore district	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75	6.50 - 6.75
U. S. Motor Gasoline, 58-62°					
Bradford-Warren (Western Penna.)	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.50 - 5.625	5.50 - 5.625
Other districts (Western Penna.)	5.625- 5.75	5.625- 5.75	5.625- 5.75	5.50 - 5.625	5.50 - 5.625
Motor Gasoline, Minimum 60 octane					
Bradford-Warren (Western Penna.)	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Other districts (Western Penna.)	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125	7.00 - 7.125
Motor Gasoline, Minimum 65 octane					
Bradford-Warren (Western Penna.)	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375
Other districts (Western Penna.)	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375	7.25 - 7.375

*For shipment to Texas and New Mexico destinations; Group 3 prices are quoted on northern shipments.
†Nominal.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Nov. 9, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. New Jersey

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N.J.	7	8.5	4	*	9
Newark, N. J.	7	8.5	4	*	7.5
Annapolis, Md.	8.1	9.6	5	*	10
Baltimore, Md.	7.5	9	5	*	8
Cumberland, Md.	9.1	11.6	5	*	10
Washington, D. C.	7.5	9	3	15.5	9
Danville, Va.	8.7	11.2	6	20.7	12.9
Norfolk, Va.	7.5	10	6	19.5	11.3
Petersburg, Va.	7.8	10.3	6	19.8	11.7
Richmond, Va.	7.8	10.3	6	19.8	11.7
Roanoke, Va.	9	11.5	6	21	12.9
Charleston, W.Va.	8.3	10.8	5	*	12.6
Parkersburg, W.Va.	7.6	10.1	5	*	11.2
Wheeling, W.Va.	8.5	10	5	*	12.2
Charlotte, N. C.	8.9	11.4	7	*	12.6
Hickory, N. C.	9.4	11.9	7	*	13
Mt. Airy, N. C.	9.2	11.7	7	*	12.8
Raleigh, N. C.	8.5	11	7	*	12.1
Salisbury, N. C.	9	11.5	7	*	12.7
Charleston, S. C.	7.5	10	7	20.5	11.1
Columbia, S. C.	8.5	11	7	21.5	12.1
Spartanburg, S. C.	9.2	11.7	7	22.2	12.9

*S. O. New Jersey transferred stations to dealers; no prices available.

Price basis to undivided dealers: Dealer t.w. price less 0.5c per gal.

Price basis to commercial consumers: Effective Nov. 2, 1936, to contract and non-contract accounts, taking following deliveries at one time, by hose connection, prices based on consumer tank car price in effect at time and place of delivery: 500 gals. or more, 0.5c over t.c. price; less than 500 gals., 0.75c over; accounts not taking deliveries by hose connection, 1c over t.c.

Kerosine Discount: 1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore City contract not necessary) except no discount in state of New Jersey.

Socony-Vacuum Oil Co., Inc.

(S. O. New York Division)

Socony Mobilgas

	"Split" Dealer T.W.	Tax-es	Total "Split" Dealer T.W.	†S.S.	Kerosine T.W.
Metropolitan N. Y. City: Boroughs of Manhattan, Bronx and Brooklyn (Kings and Queens)	8.7	*4	12.7	...	7.25
Borough of Richmond (Staten Is.)	9	*4	13	...	7.25
Albany, N. Y.	8.7	4	12.7	...	7.75
Binghamton, N. Y.	10	4	14	...	9
Buffalo, N. Y.	9.5	4	13.5	...	8.25
Jamestown, N. Y.	10	4	14	...	8.25
Plattsburg, N. Y.	9.7	4	13.7	...	8.75
Rochester, N. Y.	9.5	4	13.5	...	8.25
Syracuse, N. Y.	9.5	4	13.5	...	8.75
Danbury, Conn.	9	4	13	...	8
Hartford, Conn.	8.9	4	12.9	...	7
New Haven, Conn.	8.8	4	12.8	...	7.5
Bangor, Me.	10	5	15	...	8
Portland, Me.	9.5	5	14.5	...	7.75
Boston, Mass.	8.5	4	12.5	...	7.5
Concord, N. H.	10.5	5	15.5	...	8.5
Lancaster, N. H.	11.5	5	16.5	...	9.5
Manchester, N. H.	10	5	15	...	8
Providence, R. I.	8.5	3	11.5	...	7.25
Burlington, Vt.	9.7	5	14.7	...	8.75
Rutland, Vt.	10	5	15	...	8.5

*Plus 2% city sales tax computed at time of each sale.

†Socony-Vacuum transferred stations to dealers; no prices available.

Price basis to undivided dealers: 0.5c less than "split" dealer t.w.

To commercial consumers: No official schedule of commercial discounts has been announced by Socony-Vacuum.

Atlantic Refining

Atlantic White Flash Plus Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Philadelphia, Pa.	11	5	16	16	9.5
Pittsburgh, Pa.	12.5	5	17.5	19.5	9
Allentown, Pa.	11.75	5	16.75	**	9.5
Erie, Pa.	12.5	5	17.5	18.5	8
Scranton, Pa.	11.75	5	16.75	**	10
Altoona, Pa.	12.5	5	17.5	19.5	9.5
Dover, Del.	12	5	17	**	10
Wilmington, Del.	11	5	16	**	9
Boston, Mass.	8	4	12	**	7
Springfield, Mass.	8.5	4	12.5	**	7.5
Worcester, Mass.	9	4	13	**	7.75
Fall River, Mass.	8	4	12	**	7
Hartford, Conn.	8.4	4	12.4	**	7
New Haven, Conn.	8.3	4	12.3	**	7.5
Providence, R. I.	8	3	11	**	7
Atlantic City, N. J.	10	4	14	16.5	9
Camden, N. J.	10	4	14	16.5	8
Trenton, N. J.	10	4	14	16.5	8
Annapolis, Md.	9.1	5	14.5	**	9.5
Baltimore, Md.	8.5	5	13.5	**	8
Hagerstown, Md.	9.5	5	14.5	**	10
Richmond, Va.	10.3	6	16.3	**	11.7
Wilmington, N. C.	10.1	7	17.1	**	11.3
Brunswick, Ga.	10.5	7	17.5	**	*12.5
Jacksonville, Fla.	10	8	18	**	11.5

*Georgia has kerosine tax of 1c per gal., not included in above price.

**Atlantic Refining transferred stations to dealers; no prices available.

Dealer discounts: on Atlantic White Flash Plus gasoline, thru territory, except Philadelphia; divided dealers, price equal to 3.5c off posted s.s. price; undivided dealers, price equal to 4c off posted s.s. price; authorized dealers contracts previous to Aug. 19, 1933, price equal to 3c less than posted s.s. price, plus 1c rental; at Philadelphia, delivered t.w. price to 100% dealers 8c, and to split dealers, 8.5c, effective Oct. 7.

Price basis to commercial consumer: Effective Oct. 1, 1935, on yearly gasoline purchases based on posted tank car prices plus following amounts: 1,200 to 36,000 gals., 2.5c over t.c.; 36,000 to 120,000 gals., 2c; 120,000 to 240,000 gals., 1.5c; 240,000 to 480,000 gals., 1c; 480,000 gals. and over, 0.5c.

S. O. Ohio

Sohio X-70 Gasoline

	Consumer T.W.	Tax	Total Consumer T.W.		
Ohio Statewide	12.5	5	17.5	‡	*13.5

Counties below statewide gasoline schedule: Ashtabula, Butler, Champaign, Clarke, Clermont, Columbiana, Darke, Defiance, Fayette, Fairfield, Franklin, Greene, Hamilton, Jefferson, Knox, Licking, Lucas, Madison, Mahoning, Miami, Montgomery, Pickaway, Preble, Ross, Trumbull and Warren: 11.5 5 16.5 ... ...

Paulding: 11 5 16 ... ...

Renown (Third Grade Gasoline)

Ohio Statewide	12	5	17	‡	...

Counties below statewide gasoline schedule: Butler, Clermont, Darke, Hamilton, Greene, Miami, Montgomery, Preble and Warren: 11.5 5 16.5 ... ...

Ashtabula, Champaign, Clarke, Columbiana, Defiance, Fairfield, Fayette, Franklin, Jefferson, Knox, Licking, Lucas, Madison, Mahoning, Pickaway, Ross and Trumbull: 11 5 16 ... ...

Paulding: 9 5 14 ... ...

Counties above statewide schedule: Hocking and Summit: 12.5 5 17.5 ... ...

Kerosine Prices

(Off Statewide Level)

Kerosine prices are off statewide level in the following counties:

Gallia: *13

Allen, Ashtabula, Auglaize, Champaign, Columbiana, Darke, Fulton, Hancock, Hardin, Henry, Logan, Mahoning, Mercer, Portage, Preble, Putnam, Shelby, Summit, Trumbull, Union, Van Wert and Wyandotte: *12.5

Defiance and Paulding: *12

S. O. Ohio—Cont'd

Statewide Prices to Resellers & Agents

(These gasoline prices are based on low of Group 3, 68-70 octane, gasoline tank car market as published in Platt's Oilgram, to the nearest 0.5c).

Including taxes	†Undivided Accounts	Divided Accounts	**Authorized Agents
Sohio X-70	16	16.5	16.5
Renown (3rd grade)	15.5	16	16

‡Effective Sept. 16, 1936, S. O. Ohio began leasing service stations to dealers. No statewide s.s. price available although the company does post s.s. prices locally at points where it still operates stations.

Sales tax: Ohio's 3% sales tax, effective Jan. 27, 1935, is added "where assessable, to regular posted prices," S. O. Ohio says.

*Kerosine prices include 1c state tax.

†Excluding authorized agents.

**Excluding 0.5c rental.

Discounts to commercial contract tank wagon consumers only: on all motor gasolines, thru Ohio, effective Sept. 16, 1936, except counties mentioned hereafter, off posted t.w. price, on deliveries per month: 1,000 to 9,999 gals., 1.5c per gal.; 10,000 gals. and over, 2.5c. Under 1,000 gals., posted t.w. price. Single deliveries of less than 25 gals., on X-70 and Ethyl, 2c above consumers, t.w. price; Renown, 1c above. Q. D. A. is off statewide schedule in the following counties: Allen, Ashtabula, Auglaize, Columbiana, Darke, Defiance, Franklin, Fulton, Hamilton, Hancock, Hardin, Henry, Jefferson, Knox, Logan, Lucas, Mahoning, Medina, Mercer, Pickaway, Putnam, Ross, Shelby, Trumbull, Union, Van Wert, Washington and Williams: for this information, write National Petroleum News.

Discounts on kerosine: to dealers and commercial consumers, 3c per gal. off t.w. price, any quantity.

S. O. Kentucky

Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Lexington, Ky.	12	6	18	20	11
Louisville, Ky.	12	6	18	20	10
Paducah, Ky.	10.5	6	16.5	**	8
Covington, Ky.	11.5	6	17.5	19.5	10.5
Jackson, Miss.	13	7	20	22	*12.5
Vicksburg, Miss.	12.5	7	19.5	**	*12.5
Birmingham, Ala.	13	*8	21	23	12
Mobile, Ala.	11	*9	20	21	11
Montgomery, Ala.	11.5	*9	20.5	21	*14
Macon, Ga.	13	7	20	22	*14
Atlanta, Ga.	13.5	7	20.5	22.5	*13
Augusta, Ga.	12.5	7	19.5	21	*12.5
Savannah, Ga.	11.5	7	18.5	20.5	*12.5
Jacksonville, Fla.	10	8	18	20	11.5
Miami, Fla.	11.5	8	19.5	21.5	12.5
Tampa, Fla.	10.5	8	19.5	20.5	11.5
Pensacola, Fla.	12.5	*9	21.5	23.5	10.5

(Kyso Third Grade)

Lexington, Ky.	9.5	6	15.5	16	...
Louisville, Ky.	10.5	6	16.5	18	...
Paducah, Ky.	7.5	6	13.5	**	...
Covington, Ky.	10	6	16	17.5	...
Jackson, Miss.	11.5	7	18.5	20	...
Vicksburg, Miss.	9.5	7	16.5	**	...
Birmingham, Ala.	11	*8	19	20	...
Mobile, Ala.	8.5	*9	17.5	18	...
Montgomery, Ala.	8.5	*9	17.5	18	...
Atlanta, Ga.	10.5	7	17.5	18	...
Augusta, Ga.	9	7	16	16.5	...
Macon, Ga.	10	7	17	17.5	...
Pensacola, Fla.	10.75	*9	19.75	21	...

Dealer Discount: off posted s.s. price, on Crown and Crown Ethyl gasolines to "undivided" dealers 4c; on Kyso, 3c. To "divided" dealers: Crown and Ethyl, 3.5c, and Kyso, 2.5c, all effective on or about Jan. 1, 1934.

Discounts to tank wagon consumers: all single deliveries of 50 gals. or less, get posted s.s. price: all single deliveries of 50 gals. or more, to be billed at posted t.w. price, plus following discounts, off posted t.w. price: Ethyl and Crown gasoline, 50 to 2,999 gals. monthly, 1.5c; Kyso, 1c; 3,000 to 24,999 gals., Ethyl and Crown, 2c; Kyso, 1.5c; 25,000 gals. or more, Ethyl and Crown, 3c; and Kyso, 2.5c.

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 1/25c; Missouri, 3/100c; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal., in lots of more than 50 bbls, 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fee only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls.

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Nov. 9, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

S. O. Kentucky—Cont'd

*Taxes: in the tax column is included these city and county gasoline taxes at the following points: Mobile, 2c city; Birmingham, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax. Montgomery kerosine price includes 1c city tax.

**S. O. Kentucky transferred stations to dealers; no prices available.

S. O. Indiana

Red Dealer Prices

	Tax	Crown Total T.W.	Red Crown	Stanolind	Kerosine T.W.
Chicago, Ill.	4	15.4	13.4	13.4	9.2
Decatur, Ill.	4	15.4	13.9	13.9	9.2
Joliet, Ill.	4	14.5	13.9	13	9.2
Peoria, Ill.	4	15.4	13.9	13.9	9.2
Quincy, Ill.	4	15.2	13.7	13.7	9.0
Indianapolis, Ind.	5	17.1	15.6	15.6	‡13
Evansville, Ind.	5	17.3	15.4	15.1	‡13.7
South Bend, Ind.	5	17.3	15.8	16	‡13
Detroit, Mich.	4	15.0	13.5	13.0	8.8
Grand Rapids, Mich.	4	15.4	13.9	13.9	9.3
Saginaw, Mich.	4	15.6	14.1	14.1	10.1
Green Bay, Wis.	5	17.1	15.6	15.6	9.9
Milwaukee, Wis.	5	16.7	15.2	13.4	9.5
La Crosse, Wis.	5	16.8	15.3	15.3	9.6
Minneapolis-St. Paul	4	15.8	14.3	14.3	9.6
Duluth, Minn.	4	16.2	14.7	14.7	10
Mankato, Minn.	4	15.8	14.3	14.3	9.6
Des Moines, Ia.	4	15.2	13.7	13.3	9.0
Sioux City, Ia.	4	15.4	13.9	13.9	9.2
Davenport, Ia.	4	15.4	13.9	13.9	9.2
Mason City, Ia.	4	15.6	14.1	12.4	9.4
St. Louis, Mo.	†4	15.1	13.6	13.6	8.9
Kansas City, Mo.	†4	14.8	13.3	13.3	8
St. Joseph, Mo.	†4	14.8	13.3	13.3	8.6
Fargo, N. D.	4	16.8	15.3	15.3	10.6
Minot, N. D.	4	18.0	16.5	16.5	11.8
Huron, S. D.	*5	17.3	15.8	15.8	10.1
Wichita, Kans.	4	14.3	11.5	10.5	8.0

†St. Louis, Kansas City and St. Joseph prices include 1c city tax. ‡Includes 4c state tax.

*South Dakota gasoline and kerosine prices include 0.1c for sales tax.

Note: Effective July 1, 1935 in Iowa, and Sept. 11, 1936, in Indiana, Kansas, Michigan, Minnesota, Missouri, South Dakota and Wisconsin, and effective Oct. 1, 1936 in Illinois and North Dakota, S. O. Indiana discontinued posting service station prices, posting only a t.w. and a dealer price.

Discount to commercial consumers: Effective Jan. 1, 1935, thru territory, except Michigan effective Feb. 1, on purchases per month, discount off t.w. prices; all gasolines, 25 to 1,000 gals., at t.w. price; 1,000 gals., or more, 1.5c off t.w. on Ethyl and Red Crown, and 0.5c on Stanolind. Minimum delivery is 25 gals.

Subnormal Stanolind Points

Normally Stanolind tank wagon prices are 1c under normal Red Crown t.w. prices. Among subnormal points on Stanolind t.w. are these: Detroit, 13.5c; Des Moines, 14.1c; Mason City, 13.9c; Huron, 16c; and Wichita, 11.5c, all including state and federal taxes.

S. O. Nebraska

Standard Red Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Omaha, Neb.	11.8	6	17.8	19.8	9.5
McCook, Neb.	12.5	6	18.5	20.5	10.2
Norfolk, Neb.	12.2	6	18.2	20.2	9.9
North Platte, Neb.	12.6	6	18.6	20.6	10.3
Scottsbluff, Neb.	13.3	6	19.3	21.3	11
Reliance Gasoline (Third Grade)					
Omaha, Neb.	10	6	16	16	....
McCook, Neb.	11.5	6	17.5	18.9	....
Norfolk, Neb.	11.2	6	17.2	19.2	....
North Platte, Neb.	11.6	6	17.6	19.6	....
Scottsbluff, Neb.	12.3	6	18.3	20.3	....

Discount to dealers: where service station gasoline prices are normal, resellers' allowance off service station prices are (*Maximum* over-all, including rent) as follows: Reliance 2½c; Standard Red Crown, and Solite with Ethyl, 3½c. Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (*Minimum* over-all including rent): Reliance, 2c, Standard Red Crown and Solite with Ethyl, 3c.

Discounts to consumers: for tank wagon deliveries covered only by Standard Commercial Consumer Contract, effective January 1, 1935.

S. O. Louisiana

Essolene

	Consumer Tank Car	Dealer T.W.	Taxes	Posted S.S.	Kerosine T.W.
Little Rock, Ark.	7.5	10	7.5	**	11.5
Alexandria, La.	7.5	10	8	**	*11
Baton Rouge, La.	7	9.5	8	21	*11.5
New Orleans, La.	7	9.5	*10	23	*13
Lake Charles, La.	8	10.5	8	**	*10
Shreveport, La.	6.5	9	8	**	*10
Lafayette, La.	8	10.5	8	**	*12.5
Bristol, Tenn.	10	11.25	8	**	14.5
Chattanooga, Tenn.	9.5	12	8	**	11.5
Knoxville, Tenn.	10	12.5	8	**	14
Memphis, Tenn.	8	10.5	8	22	9.5
Nashville, Tenn.	9	11.5	8	**	10

*New Orleans gasoline tax includes 7c state, 1c federal, and 2c parish tax. Louisiana kerosine prices include 1c state tax; in addition New Orleans has 1c parish tax.

**S. O. Louisiana transferred stations to dealers; no prices available.

Price basis to dealers: Undivided dealers get dealer price, less 0.5c.

Price basis to commercial consumers: Effective Nov. 2, 1936, to contract and non-contract accounts, taking following deliveries at one time, by hose connection, prices based on consumer tank car price in effect at time and place of delivery; 500 gals. or more, 0.5c over t.c. price; less than 500 gals., 0.75c over; accounts not taking deliveries by hose connection, 1c over t.c.

Humble Oil & Refining Co.

Humble Motor Fuel

	*100% Dlr. T.W.	Taxes	*100% Dlr. T.W.	S.S.	Kerosine T.W.
Dallas, Tex.	8.5	5	13.5	17	8.5
Ft. Worth, Tex.	8.5	5	13.5	17	8.5
Houston, Tex.	9	5	14	18	8.5
San Antonio, Tex.	9	5	14	18	8.5
U. S. Motor Fuel (Third Grade)					
Dallas, Tex.	7	5	12	14	....
Ft. Worth, Tex.	7	5	12	14	....
Houston, Tex.	8	5	13	16	....
San Antonio, Tex.	8	5	13	16	....

*Price is t.w. price to contract dealers and commercial consumers. Price to open dealers is 0.5c above t.w. prices shown above.

Price basis to dealers: to contract dealers consumer accounts off posted retail price: when posted retail price, including all taxes on Esso motor fuel is: 19.1c per gal. and above discount is 4c; 19c to 18.1c, 3.5c; and 18c and below, 3c. Humble motor fuel, 17.1c and above, 4c; 17 to 16.1c, 3.5c; and 16c and below, 3c; U. S. motor fuel, 15.1c and above, 3c; 15 to 14.1c, 2.5c; and 14c and below, 2c. To "open" dealer accounts, discounts in each case are 0.5c less on the same price basis.

Continental Oil

Conoco Bronze Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Denver, Colo.	14	5	19	21	11
Grand Junction, Col.	15	5	21.5	23.5	15
Pueblo, Colo.	14	5	19	21	10
Casper, Wyo.	14.5	5	19.5	21.5	11.5
Cheyenne, Wyo.	14.5	5	19.5	21.5	13
Billings, Mont.	16.5	6	22.5	24.5	14.5
Butte, Mont.	15	6	21	23	14.5
Great Falls, Mont.	16.5	6	22.5	24.5	14.5
Helena, Mont.	16.5	6	22.5	24.5	14.5
Salt Lake City, Utah.	16	5	21	23	16
Boise, Ida.	16.5	6	22.5	24.5	18
Twin Falls, Ida.	17	6	23	25	18
Albuquerque, N. M.	12.5	†6.5	19	21	13
Roswell, N. M.	13.5	†6.5	20	22	10
Santa Fe, N. M.	14.5	*7	21.5	23.5	12
Ft. Smith, Ark.	9.5	5	14.5	**	8
Little Rock, Ark.	9.5	7.5	17	**	9.5
Texarkana, Ark.	9.5	5	14.5	18.5	8.5
Demand (Third Grade)					
Denver, Colo.	12	5	17	19	....
Cheyenne, Wyo.	12.5	5	17.5	19.5	....
Helena, Mont.	14.5	6	20.5	22.5	....
Salt Lake City, Utah.	12	5	17	19	....
Boise, Ida.	14.5	6	20.5	22.5	....
Albuquerque, N. M.	10.5	†6.5	17	19	....
Roswell, N. M.	9	†6.5	15.5	17.5	....

Continental Oil—Cont'd

Demand (Third Grade)

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Santa Fe, N. M.	10	*7	17	19	....
Ft. Smith, Ark.	8.75	5	13.75	**	....
Little Rock, Ark.	8.75	7.5	16.25	**	....
Texarkana, Ark.	7	5	12	14	....

†Includes city tax of 0.5c.

*Includes 1c city tax.

**Continental Oil transferred stations to dealers: no prices available.

Discounts: effective March 1, 1934, on gasolines thru territory, off normal s.s. price, except Montana, to "undivided" dealers: Ethyl and Conoco Bronze, 4c; Demand, 3c; except Arkansas, 3.25c. To "divided" dealers thru territory: Ethyl and Conoco Bronze, 3.5c; Demand, 2.5c, except Utah and Idaho where full 100% or undivided dealer discount is applied to divided dealers also; thru Montana, effective March 24, 1936, on gasoline, off t.w. price to "undivided" dealers: Ethyl and Conoco Bronze, 2c; Demand, 1c; to "divided" dealers: Ethyl and Conoco Bronze, 1.5c; Demand 0.5c. In Arkansas, all dealer discounts are reduced by one-half the difference between the normal s.s. and the posted price, when such posted prices are subnormal.

OKLAHOMA

	Tax	Dealer T.W. Conoco Bronze	Prices Demand	Kerosine T.W.
Muskogee	5	14	13	7
Oklahoma City	5	14	13	8
Tulsa	5	14	12	8

S. O. California

Standard Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
San Francisco, Cal.	13	4	17	18	11.5
Los Angeles, Cal.	12.5	4	16.5	17.5	9
Fresno, Cal.	13.5	4	17.5	18.5	11
Phoenix, Ariz.	14.5	6	20.5	21.5	†16
Reno, Nev.	14.5	5	19.5	20.5	13
Portland, Ore.	13.5	6	19.5	20.5	13.5
Seattle, Wash.	13.5	6	19.5	20.5	13.5
Spokane, Wash.	16.5	6	22.5	23.5	16.5
Tacoma, Wash.	13.5	6	19.5	20.5	13.5
Flight Gasoline (Third Grade)					
San Francisco, Cal.	11.5	4	15.5	16.5	....
Los Angeles, Cal.	11	4	15	16	....
Fresno, Cal.	12	4	16	17	....
Reno, Nev.	13	5	18	19	....
Phoenix, Ariz.	13	6	19	20	....
Portland, Ore.	12	6	18	19	....
Seattle, Wash.	12	6	18	19	....
Spokane, Wash.	15	6	21	22	....
Tacoma, Wash.	12	6	18	19	....

†Includes 5c state tax.

Discount to dealers: on gasoline, off t.w. price on Standard Ethyl and Standard Gasoline, to 100% dealers, 3c; to split dealers, 2c; on Flight gasoline, both 100% and split dealers, 2c.

On Stanavo Aviation Gasoline, to all classes of dealers, 3c off t.w.

To commercial consumers: off tank wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery on Stanavo Aviation, Standard Ethyl and Standard Gasolines, 3c. Flight Gasoline, 2c per gallon. S.s. schedule applies on single deliveries less than 40 gallons.

On kerosine in tank car, transport truck and trailer delivery, 3c off t.w. price; plant deliveries to jobbers, 2.5c below t.w.

Canada

Prices of Imperial Oil Ltd.

Per Imperial Gallon, which is 1.2 U. S. Gallons

Three Star Imperial Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Hamilton, Ont.	15	6	21	23.5	17
Toronto, Ont.	15	6	21	23.5	17
Brandon, Man.	22.8	7	29.8	32.8	22.3
Winnipeg, Man.	21.2	7	28.2	31.2	20.7
Regina, Sask.	22.5	7	29.5	32.5	22
Saskatoon, Sask.	25.3	7	32.3	35.3	24.8
Edmonton, Alta.	23.5	7	30.5	33.5	24.2
Calgary, Alta.	21	7	28	31	21.5
Vancouver, B. C.	15	7	22	26	23
Montreal, Que.	12.5	6	18.5	*	17.5
St. John, N. B.	16	8	24	28	18.5
Halifax, N. S.	16	8	24	28	18.5

*Imperial Oil Ltd. transferred stations to dealers; no prices available.

Discounts to dealers: off s.s. prices:

Maritime Provinces, 4c to all classes of dealers. Quebec, except Montreal City, Prairie Provinces and British Columbia, except Vancouver, 3c to

TANK WAGON, SERVICE STATION MARKETS

Tax column includes 1c federal tax, state gasoline tax, also city and county taxes as indicated in footnotes, and inspection fees, as shown in general footnote. These prices in effect Nov. 9, 1936, as posted by principal marketing companies at their headquarters offices, but subject to later corrections

divided dealers, 4c to undivided dealers. Ontario and Montreal City, 2½c to divided dealers, 3½c to undivided dealers, Vancouver, 5c to undivided dealers, 4c to divided.

Aviation Gasoline

Following are tank car and/or tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Continental Oil.) Tax column includes 1c federal tax, and state tax; also municipal taxes as indicated in footnotes.

In Effect Nov. 9, 1936

S. O. New Jersey

	Tank Car	T.W.
Bayonne, N. J.	10	12
Baltimore, Md.	10	12
Washington, D. C.		12.6
Richmond, Va.		14.2
Greensboro, N. C.		14.7
Raleigh, N. C.		16.6
Charleston, W. Va.		14.2

Colonial Beacon Oil Co.

	T.W.
Brooklyn, N. Y.	12.8
Buffalo, N. Y.	14.1
Boston, Mass.	14.5

S. O. Pennsylvania

Philadelphia, Pa.	13.1
Pittsburgh, Pa.	13.9

S. O. Louisiana

New Orleans, La.	12.3
Shreveport, La.	12.6

Prices in above four territories do not include state or federal taxes. They are for 74 octane grade aviation gasoline. An 80 octane product generally brings 0.5c premium and an 87 octane product, 1.5c premium over the 74 octane grade.

Note: S.s. prices in above four territories are generally 6c over t.w. prices. Above t.w. prices are net, with no discounts allowed for quantity purchases. T.w. prices are generally tank car price, plus freight, plus 2.5c per gal.

S. O. Ohio

Thru Ohio

	Consumer T.W.	Tax	Total Consumer T.W.
Stanavo Ethyl Aviation:			
73 octane	15.5	5	20.5
80 octane	16.5	5	21.5
87 octane	17.5	5	22.5

Discounts: For delivery on contract to hangar operators and resellers: 2c below commercial consumer posted t.w. price.

S. O. Indiana

Chicago, Ill.	14.4	4	18.4
Indianapolis, Ind.	15.3	5	20.3
Detroit, Mich.	15.9	4	19.9
Milwaukee, Wisc.	14.7	5	19.7
Minneapolis, Minn.	14.8	4	18.8
St. Louis, Mo.	13.1	*4	17.1
Kansas City, Mo.	13.8	*4	17.8
Fargo, N. D.	15.8	4	19.8
Huron, S. D.	15.3	5	20.3
Wichita, Kans.	13.3	4	17.3

*Includes 1c city tax.
**Includes 0.1c to cover sales tax.

Humble Oil & Refining Co.

	Tank Car
Baytown, Tex. (exclusive of taxes)	8.5

Continental Oil Co.

	T.W.	Tax	Total T.W.
Denver, Colo.	17	5	22
Cheyenne, Wyo.	17.5	5	22.5
Helena, Mont.	19.5	6	25.5
Salt Lake City, Utah.	19	5	24
Albuquerque, N. M.	15.5	*6.5	22

*Includes city tax of 0.5c.

S. O. California

Phoenix, Ariz.	16.5	6	22.5
Los Angeles, Cal.	14.5	4	18.5
San Francisco, Cal.	15	4	19
Reno, Nev.	16.5	5	21.5
Portland, Ore.	15.5	6	21.5
Seattle, Wash.	15.5	6	21.5
Spokane, Wash.	18.5	6	24.5

Note: For discounts, etc., see note under Standard and Flight gasoline above.

Naphtha (In Tank Wagon)

In Effect Nov. 9, 1936

(Net price in Tank Wagon; in Cents per Gallon)

***S. O. New Jersey**

	Mineral Spirits	V.M.&P. Naphtha
Baltimore, Md.	14	15.5
Newark, N. J.	12.5	14.5
Washington, D. C.	14	**17.5

**Steel bbls. only.

***Socony-Vacuum Oil Co.**

Buffalo, N. Y.	11.5	12.5
New York City	10.5	11.5
Rochester, N. Y.	12	....
Syracuse, N. Y.	14	....
Boston, Mass.	13	13.5
Bridgeport, Conn.	13	13.5
Providence, R. I.	13	14

2c off above t.w. prices in above two territories to large buyers in some instances.

Atlantic Refining Co.

Philadelphia, Pa.	11.5	12.5
Lancaster, Pa.	13	14
Pittsburgh, Pa.	12.5	14.5

Note: Prices for Mineral Spirits also apply to Stoddard Solvent; and prices for V. M. & P. Naphtha apply also to Light Cleaners Naphtha.

S. O. Ohio

	S.R. Solvent	V.M.&P. Naphtha
Thru Ohio	13.25	13.75

Note: V.M.&P. Naphtha prices also apply on Dry Cleaners naphtha and special Varnolene; Varnolene and Sohio Solvent 0.5c below these prices. Discounts to contract consumers, off t.w. price: 300 to 999 gals., 0.5c; 1,000 to 2,499 gals. 0.75c; 2,500 to 4,999 gals., 1c; 5,000 or more gals. 1.5c.

S. O. Indiana

	Oleum Spirits	V.M.&P. Naphtha	Stanisol
Chicago, Ill.	16.2	16.5	15
Detroit, Mich.	17.9	19	18
Kansas City, Mo.	13.3	14.3	13.3
St. Louis, Mo.	13.6	14.6	12.5
Milwaukee, Wis.	18.2	19.2	18.2
Minneapolis, Minn.	17.3	18.3	16.4

Note: Prices for V.M.&P. apply also to Light Cleaners Naphtha. All prices, with exception of Missouri points, include state tax. Prices shown are base prices, before discounts.

Naphtha (In Tank Cars)

In Tank Cars (F.o.b. refinery or seaboard terminal except Ohio, delivered price.)

	V.M.&P. Naphtha	Solvent
Baltimore	10	9.5
New York Harbor	10	9
Philadelphia district	10	9.5
Providence	10	9.5
Ohio points, delivered	9.25	*8.75

*This is on S.R. solvent.

Note: In Ohio, prices on D.C. naphtha and special Varnolene are same as V.M.&P.; on Varnolene and Sohio Solvent, prices are 0.5c less than on V.M.&P.

Latest Changes

From Nov. 3 to Nov. 9 inclusive. Dates and amounts of changes shown. See table for full current prices. Changes are on gasoline unless kerosine is indicated.

Atlantic Refining—White Flash Plus:

Philadelphia, s.s. cut 1c, Nov. 7.

Corrections

Notation of amount of change and dates not previously shown in table. Table in this issue is corrected to show these changes. Changes are on gasoline unless kerosine is indicated.

S. O. New Jersey—Essolene:

Atlantic City, t.c. and dealer t.w. cut 0.5c, Nov. 2.

Commercial consumer price basis revised, thru territory, Nov. 2. See footnote under price table.

Atlantic Refining—White Flash Plus:

Philadelphia, t.w. up 1c, Oct. 7; s.s. up 1c, Oct. 20.

S. O. Indiana—Red Crown:

Indianapolis and South Bend, t.w. and dealer price cut 0.2c, Oct. 23.

Evansville, t.w. up 0.2c, dealer price cut 0.2c, Oct. 23.

S. O. Louisiana—Essolene:

Commercial consumer price basis revised, thru territory, Nov. 2. See footnote under price table.

Continental Oil—Demand:

Tulsa, dealer price up 2c, Oct. 26.

Adds to River Fleet

A contract to build a new towboat for Standard Oil Co. of Louisiana was let recently to the Marietta Mfg. Co., Pt. Pleasant, W. Va. The new boat, 190 feet long with a 42-foot beam, will be ready about March 1. The company launched recently the seventh barge in a fleet of ten also for Standard.

Another smaller towboat for the International Petroleum Co. will also be ready about March 1.

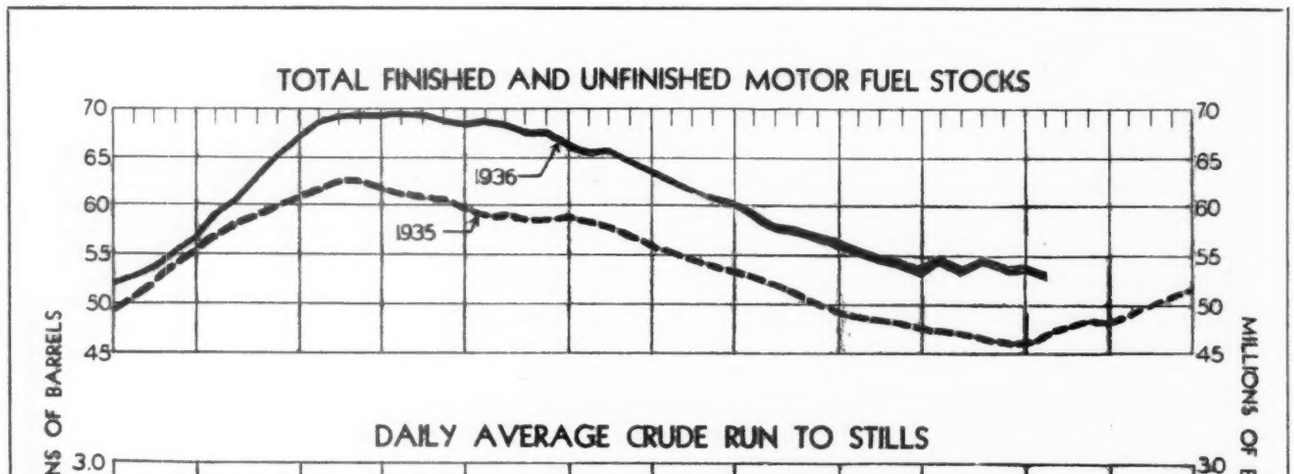
The Ashland Refining Co. plans to construct an inclined river loading platform, operating on an incline track 11 feet wide and 120 feet long on the Big Sandy river at Leach, Ky. It is to be raised and lowered by a wire cable.

Tarler Joins Alliance

NEW YORK, Nov. 6.—Irving C. Tarler, for the past 14 years eastern representative of the Standard Oil Co. of Indiana, has joined the Alliance Oil Corp. as manager of specialty sales, according to an announcement today by L. C. Quackenbush, president.

Mr. Tarler worked in several foreign offices of The Texas Co. before joining the Standard.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.


TOTAL FINISHED AND UNFINISHED MOTOR FUEL STOCKS
MILLIONS OF BARRELS
70
65
60
55
50
45
1936
1935
DAILY AVERAGE CRUDE RUN TO STILLS
3.0
2.8
2.6
2.4
2.2
2.0
4 11 18 25 1 8 15 22 29 7 14 21 28 4 11 18 25 2 9 16 23 30 6 13 20 27 4 11 18 25 1 8 15 22 29 5 12 19 26 3 10 17 24 31 7 14 21 28 5 12 19 26
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

Refinery Crude Runs Cut 112,000 Barrels

A SHARP cut in crude runs to refinery stills, bringing these runs to the lowest figure since the first of the year, and a reduction in motor fuel stocks are the high spots of the week's refinery operations as reported by the American Petroleum Institute.

Crude runs were lowered 112,000 barrels the week ended Nov. 7, to 2,687,000 barrels daily average. Three sizable cuts accounted for this large decrease. These were in California, where runs were cut 57,000 barrels; in Texas Gulf, where runs went down 38,000 barrels and in Indiana-Illinois-Kentucky where runs were lowered 22,000 barrels. Two other smaller decreases and increases in the balance of the districts, made up the rest of the changes.

Total motor fuel stocks declined nearly 500,000 barrels, standing at 53,716,000 barrels on Nov. 7, compared with 54,215,000 barrels Oct. 31. Stocks at refineries declined 364,000 barrels from the previous week, to 29,742,000 barrels the week ended Nov. 7. In transit and terminal stocks declined 252,000 barrels, to 18,221,000 barrels, while stocks of unfinished gasoline rose 117,000 barrels, to 5,753,000 barrels.

The largest decreases in motor fuel stocks occurred in California and the East Coast, where reductions amounted to 321,000 barrels and 298,000 barrels respectively. Stocks in the Texas Gulf were up 166,000 barrels.

CURRENT REFINERY OPERATIONS

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Total Finished and Unfinished Motor Fuel*		Gas & Fuel Oil		Cracked Gasoline Production % Total Capacity Reporting	Daily Av. Production (Barrels) Week Ended	
		Nov. 7	Oct. 31	Nov. 7	Oct. 31	Nov. 7	Oct. 31	Nov. 7	Oct. 31		Nov. 7	Oct. 31
East Coast	100.0	538,000	534,000	87.9	87.3	14,640	14,938	12,834	13,029	100.0	109,000	112,000
Appalachian	94.8	79,000	90,000	54.1	61.6	2,163	2,201	650	665	98.7	20,000	19,000
Ind., Ill., Ky.	96.2	423,000	445,000	92.6	97.4	8,503	8,469	6,419	6,404	99.7	134,000	139,000
Okla., Kans., Mo.	84.8	265,000	264,000	69.0	68.8	5,522	5,607	3,484	3,512	89.1	66,000	76,000
Inland Texas	48.5	113,000	115,000	70.6	71.9	1,499	1,429	1,775	1,862	70.9	29,000	33,000
Texas Gulf	97.0	585,000	623,000	82.4	87.7	7,062	6,896	8,514	8,451	78.5	137,000	161,000
La. Gulf	96.4	131,000	121,000	80.4	74.2	1,475	1,537	2,395	2,344	96.1	28,000	33,000
No. La., Ark.	90.0	57,000	56,000	79.2	77.8	303	232	408	423	95.7	9,000	8,000
Rocky Mt.	61.9	51,000	49,000	85.0	81.7	728	773	719	703	84.8	13,000	11,000
California	92.6	445,000	502,000	56.4	63.6	11,821	12,133	73,451	73,290	100.0	69,000	67,000
Total Reporting	89.9	2,687,000	2,799,000	75.6	78.8	53,716	54,215	110,649	110,683	95.9	614,000	659,000
Estimated U. S. Total (Bur. of Mines Basis.)		2,920,000	3,040,000			57,309	57,808	112,924	112,958		660,000	700,000

*Includes stocks at r n bulk terminals, pipe lines and in transit.

Supplies Of *Light Fuels* Closely Held

WITH the heating season actually under way in many areas, interest in light fuels attracted the most attention in oil markets the first week of November. As domestic consumers began ordering out additional supplies, distributors placed orders with refiners in order to keep their tanks well filled.

Spot offerings of the lighter grades became scarcer as many refiners began holding all their oil for their contract customers. Some buyers reported difficulty in obtaining all the oil they wanted on the spot market. There was, however, no indication that there was not enough oil to supply the demand.

As industrial operations continued at around the highest point of the year, demand for industrial fuels also was active. Offerings were in good balance with demand.

* * *

NEW YORK, Nov. 7.—Light fuel oil markets were steadier along the eastern seaboard the past week, although the only price changes noted were advances in No. 1 fuel at Norfolk, Wilmington and Charleston by Standard Oil Co. of New Jersey.

The advances at these southern points brought the Jersey company's price at these points to 4.875 cents a gallon, or 0.25 cent above the previous level. As the week ended all other competitors at those terminals had not met the advance,

Prices were unchanged for Nos. 2 and 4 oils at other terminals along the seaboard, although reports late in the week were that suppliers were more reluctant to sell at present price levels. Several factors contributed to this feeling, traders said, the chief ones being the better demand as the result of colder weather and the shipping strike with its possibility of slowing down deliveries of oil from the Gulf Coast.

Heavy fuel oil markets continued in good condition. Prices were without change during the week.

* * *

CHICAGO, Nov. 7.—The inactivity of prices, to a great extent, belied the actual strength and position of light fuel oils in the Mid-Western market the first week of November.

An extremely tight market for light fuel oils has existed for some time, and while prices have continued to tend higher, they have advanced only 0.125 cent in the past month on Nos. 1 and 2, with the low for No. 3 unchanged.

With the heating oil season gettiny under way in earnest as temperatures hovered near freezing through the greater portion of the middle west, and with snows and freezing weather in the balance of the territory, inquiry and sale of light fuel oil was brisker in all quarters of the Mid-Western market.

Supplies of Nos. 1, 2, and 3 oils were difficult to uncover, resellers said, and buyers, too, expressed difficulty in getting shipments on purchases.

Despite the fact that resellers, in some instances, reported they were unable to obtain light fuel oil to resell on the basis of current quotations, and despite the fact that some other sellers were asking at least one-eighth cent higher, there was sufficient material reported moved at published prices to make them representative of the going market.

Heavy fuel oils were featured with a steady demand. Prices also were steady. Industrial consumption has kept pace with offerings.

* * *

TULSA, Nov. 7.—With predictions of snow and freeezing weather in many sections of the North and middlewest, Mid-Continent refiners were swamped with inquiries for light fuel oils. Buyers were scouring the market for these oils, but in many cases refiners were unwilling to supply their requirements, it was reported.

Several refiners who heretofore had been portioning out small parcels of light fuel oil in the open market, had withdrawn from the open market entirely. Contract sales, according to most sellers, had increased to the point where there was little oil available to open market buyers. Prices were firmly entrenched at current levels. In some cases, brokers reported they were paying the same prices refiners were quoting jobbers.

Industrial fuels were in brisk demand. Refiners in the Panhandle district of Texas had little to offer in open market. Prices for the heavy grades of industrial fuel generally were tending higher.

FUEL OILS

Prices in Effect Nov. 9, 1936

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon.

	No. 1	No. 2	No. 3	No. 4
S. O. New Jersey				
Newark, N. J.	7.25	6	6	6
Atlantic City, N. J.	8	6.5	6.5	6
Baltimore, Md.	8	6	6	5.5
Washington, D. C.	8.00	6.75	6.75	6.75

Discounts: At Newark and Atlantic City, purchasers taking 50,000 gals. get discount of 0.5c per gal.

Socony-Vacuum Oil Co., Inc. (S. O. New York Division)				
New York City	7	6.50	6.50	6.00
Albany, N. Y.	7.75	6.50	6.50	6.25
Rochester, N. Y.	8.25	7.00	7.00	7.00
Boston, Mass.	7	6.25	6.25	6.25
Bangor, Me.	8	6.50	6.50	6.50
Manchester, N. H.	8	7.00	7.00	7.00
Burlington, Vt.	8.75	7.00	7.00	7.00
New Haven, Conn.	7.5	6.25	6.25	6.25
Providence, R. I.	7.00	6.50	6.50	6.00

Discounts: At New York City, consumers taking 10,000 to 50,000 gals., get 0.25c per gal. discount when minimum amount has been reached; above 50,000 gals., 0.5c.

Atlantic Refining				
Philadelphia, Pa.	6.75	5.50	5.50	5.00
Allentown, Pa.	7.75	6.50	6.50	6.50
Wilmington, Del.	7.25	6.00	6.00	5.50
Springfield, Mass.	7.50	6.00	....	6.00
Worcester, Mass.	7.75	6.75	....	6.75
Hartford, Conn.	7.00	6.50	....	6.50
S. O. Ohio				
*Ohio Statewide	8	7.50	7	6.75

Note: S. O. Ohio prices are for hose dumps, bucket dumps are 0.5c per gallon higher.

Except Cleveland Division and City of Toledo. In Cleveland Division (Cuyahoga, Lake and Geauga counties), No. 1 price is same as statewide; Nos. 2, 3 and 4 are 0.5c higher; No. 5 is priced 0.25c lower than No. 4. In Toledo No. 2 is 0.5c lower than statewide, others same.

S. O. Indiana

Stanolex Fuel and Furnace Oils

	No. 1 Fuel	Stanolex Furnace
Chicago	6.75	6.75
Indianapolis	....	*11.7
Detroit	6.8	6.8
Milwaukee	8	7.3
Minneapolis	7.25	7.25
Sioux City	7.1	7.1
St. Louis	7.5	6.8
Kansas City	6.5	6.5

*Includes state tax of 4c.

Note: Small-lot deliveries of light fuel oils range up to 2c higher than above quotations.

Sentence Tax Evaders

NEW YORK, Nov. 7.—Two West Virginia men have received jail sentences for defrauding the state of gasoline tax funds and three others are soon to be sentenced, also on charges involving gasoline tax revenues, according to information reaching the American Petroleum Industries Committee.

Paul Snyder and J. C. Little, both of West Virginia, were sentenced to two years in prison for defrauding the state of approximately $6000 in gasoline tax revenues through use of fraudulent refund claims, it was stated.

Frank C. Horn, former state budget director for West Virginia and Darrell E. Horn and Shirley T. White, both former employes of the gasoline tax division of the state tax department, have pleaded guilty to defrauding the state by manipulating gasoline tax refund claims, the Institute reports.

Crude Price Changes

FINDLAY, O.—Effective Nov. 1 The Ohio Oil Co. advanced Owensboro, western Kentucky, crude 5 cents, to new price of $1.28 per barrel. Effective Nov. 4 it reduced Grass Creek heavy, Wyo., crude 10 cents per barrel, to new price of $0.62 per barrel.

* * *

DALLAS—Effective Nov. 1 Magnolia Petroleum Co. met the 5 cent advance by Humble on Mirando, Tex., crude, posting new price of $0.90 that date.

TULSA—Effective Nov. 4 Stanolind Oil & Gas Co. reduced Hamilton Dome, Grass Creek heavy and Frannie heavy, all Wyoming crudes 10 cents, and reduced Frannie light 8 cents. New prices are: Hamilton Dome, $0.57; Grass Creek heavy and Frannie heavy, $0.62; and Frannie light, $0.70, all per barrel.

CRUDE OIL MARKETS

Prices in $ per bbl. of 42 U. S. gals. at the well. A. P. I. gravity. Prices are effective as of 7 a. m. of dates as given

Eastern Fields

Posted by Joseph Seep Purchasing Agency

(Effective Jan. 13, 1936, except Corning Sept. 18, 1936)

Penna. Grade Oil in Southwest Penna. Pipe Lines.....$2.17
Penna Grade Oil in Eureka Pipe Lines (West Virginia).....$2.12
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.).....$1.97
Corning Oil in Buckeye Pipe Lines (Ohio)$1.32

Posted by Other Companies

Tide Water Pipe Co., Ltd.
Bradford-Allegheny district (Penna. and N. Y.) (Effective Jan. 13, 1936)..$2.45
*The Pennzoil Co.: (Effective Jan. 13, 1936)
Penna. Grade Oil in National Transit Lines*.....$2.42
Ashland Oil & Transportation Co.:
Somerset Oil in Ashland Lines (Ky.):
(Effective Jan. 9, 1936)
Big Sandy River.....$1.30
Kentucky River.....$1.38

*The Pennzoil Co. posts $2.42 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in other lower districts range down to $2.37 per bbl. at well.

Michigan

Posted by Pure Oil Co.

Midland, Midland County (Sept. 16, 1936)$1.32

Posted by Simrall Pipe Line Corp.

(Effective Sept. 16, 1936)

West Branch and equal grades.....$1.16
Beaverton, Crystal, Greendale, Porter and equal grades.....$1.32

Central States Fields

Posted by Ohio Oil Co.

(Effective Jan 9, 1936)

Illinois, Princeton.....$1.23

(Effective Sept. 22, 1936)

Lima.....$1.15

(Effective Nov. 1, 1936)

Owensboro (Western Ky.).....$1.28

Posted by Stoll Oil Refining Co.

(Effective Jan. 9, 1936)

Stoll Pipe Line Oil (Ky.).....$1.28

Canadian Fields

Posted by Imperial Oil Limited

Western Ontario
(Effective Sept. 9, 1933)

Petrolia.....$2.10
Oil Springs.....$2.17

Alberta—Turner Valley
(Prices f.o.b. field tankage)
(Effective Feb. 3, 1936)

Crude:		Naphtha:	
40-44.9	$1.55	†Clear	$2.70
45-49.9	$2.12	†Discolored	$2.46

50 and above $2.32

†Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°. Discolored naphtha: same specifications as for clear naphtha except color.

Mid-Continent

Posted by Stanolind Crude Oil Purchasing Co.

(Effective Jan. 9, 1936)

(In Oklahoma Kansas)	(In North-North Central Texas)
Below 29.....$0.94	$0.84
29-29.9..... 0.96	0.86
30-30.9..... 0.98	0.88
31-31.9..... 1.00	0.90
32-32.9..... 1.02	0.92
33-33.9..... 1.04	0.94
34-34.9..... 1.06	0.96
35-35.9..... 1.08	0.98
36-36.9..... 1.10	1.00
37-37.9..... 1.12	1.02
38-38.9..... 1.14	1.04
39-39.9..... 1.16	1.06
40 and above.... 1.18	1.08

Above Stanolind prices met as follows:

Jan. 9, by The Texas Co. in North and North Central Texas; Continental Oil in all three states.

Note: Stanolind prices in Okla.-Kans. are for quantities computed by 97% tank tables. In Texas, 99% tank tables are used, volume corrected to 60° F., and deduction for full b.s. & w. content.

Posted by Carter Oil Co.

In Oklahoma
(Effective Jan. 9, 1936)

Below 25	$0.86	33-33.9	$1.04
25-25.9	0.88	34-34.9	1.06
26-26.9	0.90	35-35.9	1.08
27-27.9	0.92	36-36.9	1.10
28-28.9	0.94	37-37.9	1.12
29-29.9	$0.96	38-38.9	$1.14
30-30.9	0.98	39-39.9	1.16
31-31.9	1.00	40 and above	1.18
32-32.9	1.02		

Jan. 9, Carter's Oklahoma gravity and price schedule met in Oklahoma-Kansas by Sinclair Prairie, and Humble's West Central Texas schedule met in North and North Central Texas where Sinclair-Prairie buys. Same day, Shell Petroleum met Carter in full in Oklahoma-Kansas.

Posted by Magnolia Petroleum Co.

(Effective Jan. 9, 1936)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.86 and ending with 40 & above, at $1.18.

In Texas: North and North Central, including Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden; and in Central Texas, including Mexia, Wortham, and Panola county, same gravity and price schedule as Humble in West Central Texas, which see below, beginning with below 29 at $0.84, and ending with 40 and above, at $1.08.

Posted by Humble Oil & Refining Co.

Texas Fields
(*West Central Texas)
(Effective Jan. 9, 1936)

Below 29	$0.84	35-35.9	$0.98
29-29.9	0.86	36-36.9	1.00
30-30.9	0.88	37-37.9	1.02
31-31.9	0.90	38-38.9	1.04
32-32.9	0.92	39-39.9	1.06
33-33.9	0.94	40 and above.	1.08
34-34.9	0.96		

*Includes Brown, Callahan, Coleman, Comanche, Eastland, Fisher, Haskell, Jones, Shackelford, Stephens, Throckmorton and Young counties.

Shell Petroleum Corp., on Jan. 9, met Humble in Fisher county, except that Shell posts five lower grades, beginning with below 25 gravity at $0.76; 25-25.9, $0.78; 26-26.9, $0.80; 27-27.9, $0.82; and 28-28.9, $0.84; rest of schedule same as Humble's in West Central Texas.

†Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F. Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

*East Central Texas
(Effective Jan. 9, 1936)

Below 29	$0.91	35-35.9	$1.05
29-29.9	0.93	36-36.9	1.07
30-30.9	0.95	37-37.9	1.09
31-31.9	0.97	38-38.9	1.11
32-32.9	0.99	39-39.9	1.13
33-33.9	1.01	40 and above.	1.15
34-34.9	1.03		

*Including Anderson, Cherokee, Limestone, Navarro and Van Zandt counties.

Stanolind Oil & Gas Co., Jan. 20, posted in Marion County (East Central Texas), below 29 oil at $0.86, plus 2c differential, to 40 and above at $1.10.

Jan. 9, Sinclair-Prairie met Humble's prices in Mexia.

Panhandle Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

	Gray County	Carson-Hutchinson
Below 35	$0.86	$0.81
35-35.9	0.88	0.83
36-36.9	0.90	0.85
37-37.9	0.92	0.87
38-38.9	0.94	0.89
39-39.9	0.96	0.91
40 & above	0.98	0.93

Jan. 9, above prices met by Sinclair-Prairie, Magnolia and The Texas Co. in the entire area, also by Continental Oil in Carson-Hutchinson.

East Texas

(Effective Jan. 9, 1936)

Stanolind, Humble, Shell, Sinclair-Prairie, Texas, Sun Oil and Magnolia.....$1.15

Shell also posted on Jan. 9, in Livingston area, Polk County, Texas, $1.15.

Northeast Texas

(Posted by Humble, Nov. 1, 1936)

Talco.....*$0.65

(Posted by Magnolia, May 1, 1936)

Cass County (Rodessa field):
Below 29.....$0.86
29-29.9..... 0.88

Rest of schedule same as S. O. La. posts in Rodessa, which see below.

*Correction: This price should have been published in Nov. 4 issue.

West Texas and New Mexico

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

(Including Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler and Upton Counties, Texas, and Lea county, New Mexico).

Below 29	$0.75	33-33.9	$0.84
29-29.9	0.76	34-34.9	0.86
30-30.9	0.78	35-35.9	0.88
31-31.9	0.80	36 & above	0.90
32-32.9	0.82		

Pecos, West Texas.....$0.85

Posted by Continental Oil Co.

(Effective Jan. 9, 1936)

Artesia, Jackson and Maljamar pools, N. M.....$0.80

Jan. 16, Magnolia met Humble in Crane, Upton, Howard, Glasscock, Mitchell and Winkler.

Jan. 9, Texas Co. posted Winkler and Lea counties at $0.85; Crane and Upton, $0.80

Shell Petroleum Corp., on Jan. 23, met Humble in Crane, Glasscock, Howard, Pecos (except Yates shallow pool), Winkler, and Upton counties, Tex., and in Lea County, N. Mex. On Jan. 9, Shell posted in Yates shallow pool in Pecos county, Tex., $0.75.

South and Southwest Texas

Posted by Humble Oil & Refining Co.

(Effective Jan. 14, 1936)

Darst Creek	$0.97	Pettus	$1.25
Salt Flat	0.97	Tomball	1.30

(Effective Nov. 1, 1936)

Saxet	*$0.95	Mirando	*$0.90
Heyser heavy	0.90	Placedo heavy	0.90
Heyser light	1.15	Taft	0.95

*Correction: This price should have been published in Nov. 4 issue.

Shell Pet. Corp. on Jan. 9, posted $0.97 in Salt Flat district, Tex.

*Anahuac and *Dickinson (including Flour Bluff, Nov. 1, 1936)

(Effective Jan. 9, 1936)

30-30.9	$1.04	36-36.9	$1.16
31-31.9	1.06	37-37.9	1.18
32-32.9	1.08	38-38.9	1.20
33-33.9	1.10	39-39.9	1.22
34-34.9	1.12	40 & above	1.24
35-35.9	1.14		

*Anahuac in Chambers county; Dickinson in Galveston.

Jan. 9, The Texas Co. posted $0.97 for Darst Creek.

Jan. 9, Magnolia posted $0.97 in Darst Creek; $1.30 in Tomball; $0.90 in Luling; $1.00 in Lytton Springs; $1.10 for Cleveland, Liberty county, Tex.; $1.03 in Hardin, Liberty county, Tex. Nov. 1, 1936, posted $0.90 for Mirando, Tex.

Posted by Humble

Conroe and Raccoon Bend

(Deep sand crudes)

(Effective Jan. 9, 1936)

35-35.9	$1.24	38-38.9	$1.30
36-36.9	1.26	39-39.9	1.32
37-37.9	1.28	40 & above	1.34

Jan. 9, Texas Co. met above prices.

North Louisiana-Arkansas

Posted by Standard Oil Co. of Louisiana

(Effective Jan. 10, 1936)

(In Caddo, Homer, Haynesville, Sabine, De Soto, Rodessa, Sarepta, Carterville, El Dorado, and Miller county).

Below 25	$0.78	33-33.9	$0.96
25-25.9	0.80	34-34.9	0.98
26-26.9	0.82	35-35.9	1.00
27-27.9	0.84	36-36.9	1.02
28-28.9	0.86	37-37.9	1.04
29-29.9	0.88	38-38.9	1.06
30-30.9	0.90	39-39.9	1.08
31-31.9	0.92	40 and above	1.10
32-32.9	0.94		

Smackover, Ark.....$0.75
Nevada, Ark..... 0.65
Urania, La. (La. Oil Refg. Co., Jan. 1, '34) 0.87
Tepetate, La. (Continental Oil, Jan. 9, '36)$1.12

The Texas Co., effective Jan. 9, posted in No. La.-Ark. same prices as Humble posts in West Central Texas. It also posted $0.80 for Smackover and $1.12 for La Fitte, La.

Magnolia Petroleum Co., effective Jan. 16, posted on No. La.-Ark. crude, prices beginning with $0.86 for below 29 gravity, plus 2 cent differential to 40 and above, at $1.10; this posting includes Rodessa, beginning March 16, 1936. It also posted on the same day, Eldorado (East Field), and Smackover, Ark., $0.75; Lockport, La., below 20 gravity, at $0.92, plus 2c differential, to 34 and above, which is $1.22; and for Iowa, La. and Cameron-Meadow field Cameron Parish, La., below 20 at $0.82, plus 2c differential, to 34 and above, at $1.12.

Stanolind Oil & Gas Co., Jan. 20, posted in Caddo Parish, La., below 29 oil at $0.86, plus 2c differential, to 40 & above at $1.10.

Shell Pet. on Jan. 9, posts same schedule in Black Bayou and White Castle, La. as Magnolia posts in Lockport, which see in above paragraph and in Iowa district, La. posts same schedule as Magnolia in Iowa and Cameron, which also see above.

(*Continued on next page*)

Republic Oil Promotes Sales Personnel

PITTSBURGH, Nov. 6.—Changes in the sales personnel of Republic Oil Co. here Nov. 1 included the transfer of O. E. Martin, for several years manager of the Pittsburgh wholesale division, to the managership of the Petersburg, Va., offices. Mr. Martin will direct sales of unbranded products through the southeastern states, according to A. V. Crouch, advertising manager.

Succeeding Mr. Martin at Pittsburgh is Thomas B. Tomb, Cleveland, who has been manager of wholesale operations in the Cincinnati area for more than a year. Paul Stevens, Cincinnati, was advanced from terminal manager to wholesale sales manager in that area.

These changes were made following the resignation of W. H. Wilson, eastern manager, who was succeeded by Warren Hastings, as earlier announced. Mr. Hastings will have offices at 30 Rockefeller Plaza, New York.

Seek Tax Test Ruling

NEW YORK, Nov. 5.—Stipulated facts in the test suit of the Richfield Oil Corp. against the city of New York, which have been agreed upon by both sides, will be presented to the New York Supreme Court for a ruling. Following such a ruling the case will be appealed to a higher court for a final settlement involving these facts.

Richfield is suing the city to recover $7,141,000 in federal gasoline taxes paid by the company on gasoline sold to certain city departments. The cases hinge on whether or not the city departments which bought the gasoline are "essential government functions" and as such exempt from the federal tax. The federal government refused to honor the tax exemption certificates which the city issued, contending that these city departments were not exempt from the tax.

NEW YORK, Nov. 5.—Standard Oil Co. of California has declared a regular dividend of $0.25 a share and an extra dividend of 5 cents a share both payable Dec. 15 to stockholders of record Nov. 16.

CRUDE OIL MARKETS

(Continued from preceding page)

*Gulf Coastal Fields

Posted by Humble Oil & Refining Co.

(Effective Jan. 9, 1936)

Below 18	$0.88	26-26.9	$1.06
18-18.9	0.90	27-27.9	1.08
19-19.9	0.92	28-28.9	1.10
20-20.9	0.94	29-29.9	1.12
21-21.9	0.96	30-30.9	1.14
22-22.9	0.98	31-31.9	1.16
23-23.9	1.00	32-32.9	1.18
24-24.9	1.02	33-33.9	1.20
25-25.9	1.04	34 and above	1.22

(Effective Nov. 1, 1936)

Refugio heavy $0.95

Effective Dec. 1, 1934, Humble prices are based on 99% tank tables at 60F Allowance or deduction of 1% is made for each 25° change in temperature above or below 60F.

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Plymouth, Rabbs Ridge, Raccoon Bend (shallow sand), Refugio light, Sour Lake, Spindletop, Sugarland and West Columbia.

Above gravity and crude schedule met Jan. 9 by The Texas Co., except that Texas Co. posts $0.92 for below 20. Jan. 9, Sinclair-Prairie met above Humble schedule in full.

Rocky Mountain Fields

Posted by Stanolind Oil & Gas Co.

(Effective Jan. 9, 1936)

Salt Creek, Midway and Dutton Creek, Wyo., same schedule as Stanolind posts in Oklahoma, Kansas which see.

Greybull-Torchlight	1.28
Iles, light, Col.	1.06
Iles, heavy	1.00
Hogback, N. M.	1.21

(Effective Nov. 4, 1936)

Grass Creek, heavy	$0.62
Frannie light	0.70
Frannie heavy	0.62
Hamilton Dome, Wyo.	0.57

(Effective July 20, 1936)

Elk Basin, light	$1.18
Grass Creek, light	1.18

Pondera, Mont., (Postings discontinued July 1, 1936, but Stanolind pays price posted by Ohio Oil for Kevin-Sunburst, less 20c per bbl.)

Posted by Ohio Oil Co.

(Effective July 20, 1936)

Elk Basin, Wyo.	$1.18
Grass Creek, light	1.18
Rock Creek	$1.085

(Effective Nov. 1, 1936)

Big Muddy	1.11

(Effective June 5, 1936)

Sunburst, Mont.	$1.15

Posted by *International Refg. Co.

(Effective June 5, 1936)

Cut Bank, Mont.

Below 35°	$1.29	38-38.9	$1.37
35-35.9	1.31	39-39.9	1.39
36-36.9	1.33	40 and above	1.41
37-37.9	1.35		

*Texas Co. subsidiary.

Posted by Continental Oil Co.

(Effective Jan. 9, 1936)

Cat Creek, Mont.	$1.28

CALIFORNIA, Posted by Standard Oil of California

All gravities above those quoted take highest price offered in the field. Prices effective Feb. 26, 1936, except Huntington Beach, Playa del Rey, Santa Fe Springs, Kern Front, Signal Hill (Long Beach) effective March 7, 1936, and Elk Hills, effective June 22, 1936

Gravity	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Athens Rosecrans	Dominguez	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	‡Newhall and others	Mountain View	Elk Hills	Buena Vista Hills **Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$0.80	0.79	0.74	0.78	0.79	0.80	0.76	....	....	0.80	0.76	0.76	0.77	0.78	....	0.70	....	0.70	0.70	0.65	0.70	0.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	.65	.70	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	.65	.70	.70	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	....	.70	....	.70	.70	.65	.70	.70	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	....	.70	....	.70	.70	.65	.70	.70	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	....	.70	.70	.74	.74	.66	.74	.71	0.70
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	....	....	.70	.78	.78	.68	.78	.72	.70
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	.78	....	.73	.82	.82	.71	.82	.74	.70
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	....	.77	.87	.87	.74	.86	.78	.72
23-23.9	.95	.86	.77	.96	.99	1.02	.96	.84	.79	.96	.88	.93	.82	.92	.78	....	.80	.92	.92	.77	.90	.82	.76
24-24.9	.99	.91	.90	1.00	1.02	1.06	.99	.88	.81	.99	.91	.96	.85	.96	.82	....	.84	.97	.97	.80	.94	.86	.79
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	1.20	.95	....	.89	.99	.86	....	.88	1.01	1.01	.83	.98	.90	.83
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	1.05	.98	....	.92	1.03	.90	....	.91	1.06	1.06	.86	1.02	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	1.02	....	.96	1.06	.95	....	.95	1.10	1.10	.88	1.06	....	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	1.06	....	.99	1.10	.99	....	.99	1.15	1.15	.91	1.10	....	....
29-29.9	1.17	1.15	.93	1.18	1.18		1.17	1.12	.93	....	1.09	....	1.03	1.14	1.03	....	1.02	1.20	1.20	.94	1.14	....	....
30-30.9	1.21	1.19	.95	1.22	1.21		1.21	1.17	.95	....	....	....	1.07	1.17	1.08	....	1.06	1.25	1.25	.97	1.18	....	....
31-31.9					1.24		1.24	1.22	.97	....	....	....	1.11	1.21	1.12	....	1.09	1.29	1.29	.99			
32-32.9		*Elwood Terrace		....	1.27		1.27	1.27	1.00	....	....	....	1.14	1.25	1.16	....	1.13	1.34	1.34	1.02	Kettleman Hills		
33-33.9	....	1.28	....	....	....		....	1.32	....	....	....	....	1.18	1.28	1.20	....	1.17	1.38	1.38	1.04	....	1.19	....
34-34.9	....	1.32	....	....	....		....	1.37	....	....	....	....	1.22	1.32	1.25	....	1.20	....	....	....	....	1.23	....
35-35.9	....	1.35	....	....	....		....	1.42	....	....	....	....	1.25	....	1.29	....	....	....	....	....	....	1.27	....
36-36.9	....	1.39	....	....	....		....	1.46	....	....	....	....	1.29	....	1.33	....	....	....	....	....	....	1.31	....
37-37.9	....	1.43	....	....	....		....	1.51	....	....	....	....	1.32	....	1.37	....	....	....	....	....	....	1.35	....
38-38.9	....	....	....	....	....		....	1.56	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	1.39	....
39-39.9	....	....	....	....	....		....	1.61	....	....	....	....	1.40	....	....	....	....	....	....	....	....	1.43	....
40-40.9	....	....	....	....	....		....	1.66	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

F.O.B. Standard Pipe Line

*F. o. b. ship.

‡Also McKittrick, Kern River, Kern Front and Round Mountain $0.70 thru 19.9 gravity; no higher gravity quoted. **Except Lakeview Area.

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

Eastern Domestic

(Prices in cents per gallon tank car lots, unless otherwise noted, f.o.b. refinery or seaboard terminal, representing majority of sales and/or quotations. Inter-refinery sales not included. Florida and S. Carolina inspection tax not included.)

*Motor Gasoline

Prices Nov. 9	60-64 Octane	65 Octane and Above
New York harbor	6.25 – 6.50	6.50 – 6.75
New York harbor, barges	6.00 – 6.25	6.25 – 6.50
Philadelphia district	6.50	6.50 – 6.75
Baltimore district	6.50	6.50 – 6.75
Norfolk district	6.50 – 6.75	7.00
Wilmington, N. C. district	6.75	7.00
Charleston, S. C. district	6.75	7.00
Savannah district	6.75	7.00
Jacksonville district	6.75	7.00
Portland district	6.75 – 7.00	7.00 – 7.25
Boston district	6.50	6.75
Boston district, barges	6.25	6.50
Providence district	6.50	6.75
Providence district, barges	6.25	6.50

*Due to lack of companies offering U. S. Motor gasoline, 59 octane and below in the open market, prices for this grade are discontinued. Quotations nominally are 0.25c below those for 60-64 octane grade.

Water White Kerosine

Prices Nov. 9			
New York harbor	4.50 – 4.625	Savannah district	5.25
N. Y. harbor, barges	4.375– 4.50	Jacksonville district	5.25
Philadelphia district	4.50 – 4.75	Portland district	5.125
Baltimore district	4.50 – 4.625	Boston district	4.625
Norfolk district	4.625– 4.875	Boston dist., barges	4.50
Wilmington, N. C.	4.625– 4.875	Providence district	4.625
Charleston, S. C. dist.	4.625– 4.875	Providence, barges	4.50

*Fuel Oils

Prices Nov. 9	New York harbor	New York harbor, barges	Philadelphia district
No. 1	4.50 – 4.625	4.375– 4.50	4.50 – 4.75
No. 2	4.25	4.00 – 4.125	4.25
No. 3	4.25	4.00 – 4.125	4.25
No. 4	3.75 – 4.00	3.625– 3.875	3.75 – 4.00
No. 5 (per barrel)	$1.35	.....	$1.35
No. 6 (per barrel)	$1.15	.....	$1.15

	Baltimore district	Boston district
No. 1	4.50 – 4.625	4.625
No. 2	4.25	4.25
No. 3	4.25	4.25
No. 4	3.75 – 4.00	4.25
No. 5 (per barrel)	$1.35	$1.45
No. 6 (per barrel)	$1.15	$1.15

	Boston dist., barges	Providence district	Providence dist., barges
No. 1	4.50	4.625	4.50
No. 2	4.125	4.25	4.125
No. 3	4.125	4.25	4.125
No. 4	4.125	3.75 – 4.00	3.625

*Fuel oils meet specifications of U. S. Commercial Standards CS12-35.

	Bunker Oil Grade C Per Barrel	Diesel Oil Ships' Bunkers Per Barrel	Gas Oil 28-34 Gravity Per gallon	Diesel Oil Shore Plants Per gallon
New York harbor	*$1.15	*$1.65	4.25	4.25
Philadelphia dist.	*$1.15	*$1.65	4.25	....
Baltimore district	*$1.15	*$1.65	4.25	....
Norfolk district	*$1.15	*$1.785	4.25	....
Charleston district	$1.10	$1.65	....	....
Savannah district	$1.10	$1.89	....	4.75
Jacksonville dist.	$1.10	$1.995	....	4.75
Tampa district	$1.10	$1.995	....	....
Portland district	$1.25	$1.75	....	....
Boston district	$1.15	*$1.65	....	....
Providence district	$1.15	$1.65	....	....

*Lighterage for bunker oil, 5c per bbl. additional; for Diesel oil, 6.5c per bbl. additional.

Pacific Export

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

Prices—	Nov. 9	Nov. 2	Oct. 26
53-55 U. S. Motor	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
400 e.p. blend 65 Octane and above	5.25 – 5.75	5.25 – 5.75	5.25 – 5.75
38-40 w.w. kerosine, 150 fire point	4.00 – 5.00	4.00 – 5.00	4.25 – 5.00
41-43 w.w. kerosine	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
44 water white kerosine	5.00	5.00	5.00
Prime wh. kerosine	3.50 – 4.25	3.50 – 4.25	3.75 – 4.25
In Cargo lots, per barrel			
Diesel fuel oil, above 23.9°	$1.00 –$1.15	$1.00 –$1.15	$1.05 –$1.10
Diesel fuel oil, under 23.9°	$0.95 –$1.10	$0.95 –$1.10	$0.96 –$1.025
30-34 gas oil	$1.05 –$1.45	$1.05 –$1.15	$1.05 –$1.10
Grade C fuel oil	$0.75 –$0.90	$0.75 –$0.90	$0.78 –$0.85
Pacific Export (cont'd)	Nov. 9	Nov. 2	Oct. 26
In Ships' Bunkers, or deep tank lots, per barrel:			
Diesel fuel oil, above 23.9 gravity	$1.00 –$1.16	$1.00 –$1.16	$1.135–$1.16
Diesel, under 23.9 gravity	$0.95 –$1.06	$0.95 –$1.06	$1.035–$1.06
Grade C fuel oil	$0.90 –$0.95	$0.90 –$0.95	$0.925–$0.95
Cased Goods:			
Gasoline, U. S. Motor	$1.30 –$1.50	$1.30 –$1.50	$1.35 –$1.50
Gasoline, 400 e.p. blend	$1.45 –$1.65	$1.45 –$1.65	$1.45 –$1.55
38-40 w.w. kerosine, 150 fire point	$1.10 –$1.25	$1.10 –$1.25	$1.15 –$1.25
Kerosine, prime white	$1.05 –$1.15	$1.05 –$1.15	$1.10 –$1.20

New York Export

(Prices in cents per gallon in barrels, F.a.s. New York)

Cylinder Oils (Pennsylvania Products)

Bright stock:			
Light, 25 pour point	27.50	27.50	27.50
Dark, 25 pour point	27.00	27.00	27.00
Neutral oil:			
200 3 color, 25 pour point	29.00	29.00	29.00
150 3 color, 25 pour point	25.50	25.50	25.50
600 Warren E filtered,	22.50 –23.00	22.50 –23.00	22.50 –23.00
600 stm. rfd., unfiltered	19.50 –20.00	19.50 –20.00	19.50 –20.00
650 stm. rfd. unfiltered	21.00 –21.50	21.00 –21.50	21.00 –21.50
600 flash, steam refined	22.00 –22.50	22.00 –22.50	22.00 –22.50
630 flash, steam refined	24.00	24.00	24.00

Wax Domestic *and* Export

(Prices in cents per pound. Tests made by A. S. T. M. methods. Melting points shown below, however, are A. M. P., 3° higher than A. S. T. M. (E. M. P.) melting points. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans districts, in bags, carload lots, with 0.2c discount allowed for shipment in bulk. Scale solid and fully refined slabs in bags.)

	New York		New Orleans	
Prices—Nov. 9	*Domestic*	*Export*	*Domestic*	*Export*
124-6 Y.C. scale	2.40 – 2.45	2.40 – 2.45	2.40 – 2.45	2.40 – 2.45
122-4 W.C. scale	2.40 – 2.45	2.40 – 2.45	2.40 – 2.45	2.40 – 2.45
124-6 W.C. scale	2.40 – 2.50	2.40 – 2.50	2.40 – 2.50	2.40 – 2.50
123-5 Fully refined	4.45	4.125	4.45	4.125
125-7 Fully refined	4.55	4.25	4.55	4.25
128-30 Fully refined	4.80	4.50	4.80	4.50
130-2 Fully refined	5.05	4.75	5.05	4.75
133-5 Fully refined	*5.35	5.25	*5.35	5.25
135-7 Fully refined	*5.60	5.50	....	....

*Shipment either in bags or in bulk.

Gulf Coast

(Prices are f.o.b. ship at Gulf oil terminals representing traders' opinions except prices specified to the contrary. Prices cover bulk shipments of 20,000 barrels or more, unless otherwise noted.)

Motor Gasoline

For Domestic Shipment

Prices—	Nov. 9	Nov. 2	Oct. 26
59 octane and below	5.50	5.50	5.50
60-64 octane number	5.75 – 5.875	5.875	5.875
65 octane and above	6.00	6.00	6.00

Fuel Oils

No. 1 Fuel oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
No. 2 Fuel oil	3.50	3.375– 3.50	3.375– 3.50
No. 4 Fuel oil	3.25	3.125– 3.25	3.125– 3.25

Kerosine

41-43 w.w.	4.00	4.00	4.00

Gasoline

For Export Shipment

U. S. Motor gasoline	5.125	5.125	5.125
60-62, 400 e.p. gasoline	5.25	5.25	5.25
61-63, 390 e.p. gasoline	5.375	5.25 – 5.375	5.25 – 5.375
64-66, 375 e.p. gasoline	*5.50	5.375– 5.50	5.375– 5.50

*Sale only.

Kerosine

44 water white	4.125	4.125	4.125
41-43 water white	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
41-43 prime white	3.625– 3.75	3.625– 3.75	3.625– 3.75

(Continued on next page)

SEABOARD MARKETS, EXPORT AND COASTWISE

Prices do not include Federal tax. Where $ mark is shown, prices are per barrel of 42 U. S. gallons

(*Continued from preceding page*)

Gas and Bunker Oils

For Domestic and/or Export Shipment

Prices	Nov. 9	Nov. 2	Oct. 26
*26-30 translucent gas oil	3.25	3.125- 3.25	3.125- 3.25
*30 plus translucent gas oil	3.25	3.125- 3.25	3.125- 3.25
*30 plus transp. gas oil	3.25 - 3.375	3.25	3.25
Diesel Oil Ships' bunkers	$1.50	$1.50	$1.50
Grade C bunker oil, for ship's bunkers, per bbl.	†$0.95	†$0.95	†$0.95
Grade C bunker oil, per bbl. in cargoes	$0.95	$0.95	$0.95

*Less than ½ of 1% sulphur. †Lighterage 5c per bbl. additional. ‡Nominal.

Mexican Crude and Bunker Oils

(F.o.b. Steamer, Tampico)

Heavy Panuco crude taxes to be paid, per bbl.	$0.95	$0.95	$0.95
Grade C bunker oil, ship's bunkers, taxes paid, per bbl.	$0.97	$0.95	$0.95

*Nominal.

Mid-Continent Lubricating Oils

(Prices in cents per gallon in bbls. f.a.s. Gulf terminals. In drums and new barrels, 0.5c to 1c higher per gal. in some instances.)

190-200 vis. D 210 bright stock	26.00	26.00	26.00
150-160 vis. D 210 bright stock			
0-10 pour point	23.00	23.00	22.50 -23.00
10-25 pour point	22.50	22.50	22.00 -22.50
25-40 pour point	22.00	22.00	21.50 -22.00
150-160 vis. E 210 brt. stock	22.00	22.00	21.50 -22.00
120 vis. D 210 bright stock	21.00	21.00	20.50 -21.00
180 vis. No. 3 color neutral Oil:			
0-10 pour point	16.50	16.50	16.50
15-30 pour point	16.00	16.00	16.00
200 vis. No. 3 color neutral Oil:			
0-10 pour point	17.00	17.00	17.00
15-30 pour point	16.50	16.50	16.50

Mid-Continent Lubricating Oils (Cont'd.)

Prices	Nov. 9	Nov. 2	Oct. 26
600 s.r. olive green	12.25	12.25	12.25
600 s.r. dark green	11.00	11.00	11.00
631 s.r.	18.00 -18.50	18.00 -18.50	18.00 -18.50

South Texas Lubricating Oils

(Viscosity at 100° F., pour point 0. Tanker, f.o.b. Gulf oil terminals, for export shipment)

Vis. Color			
Unfiltered Pale Oils:			
100 No. 3	5.00 - 5.25	5.00 - 5.25	5.25 - 5.50
200 No. 3	6.00 - 6.50	6.00 - 6.50	6.375- 7.00
300 No. 3	6.50 - 7.00	6.50 - 7.00	7.00 - 7.50
500 No. 3½	7.50 - 7.875	7.50 - 7.875	7.875- 8.50
750 No. 4	8.75 - 9.00	8.75 - 9.00	9.00 - 9.25
1200 No. 4	9.00 - 9.25	9.00 - 9.25	9.25 - 9.50
2000 No. 4	9.75 -10.00	9.75 -10.00	9.75 -10.25
Red Oils:			
100 No. 5-6	5.00 - 5.25	5.00 - 5.25	5.25 - 5.50
200 No. 5-6	5.875- 6.50	5.875- 6.50	6.125- 6.75
300 No. 5-6	6.25 - 6.75	6.25 - 6.75	6.75 - 7.00
500 No. 5-6	7.25 - 7.50	7.25 - 7.50	7.25 - 7.625
750 No. 5-6	8.75 - 9.00	8.75 - 9.00	9.00 - 9.25
1200 No. 5-6	9.00 - 9.25	9.00 - 9.25	9.25 - 9.50
2000 No. 5-6	9.75 -10.00	9.75 -10.00	9.75 -10.25

Note: Red oil prices shown above cover oils with green cast; prices for blue cast red oils are slightly lower in some cases.

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds. British sterling; to U. S. ports cents per barrel)

	Crude &/or Fuel		Refined 0.1 &/or Spirits	
Rates—Nov. 9	Last Paid	Owners Ask	Last Paid	Owners Ask
Calif.-U.K./Cont.*	20/	20/-21/	17/	18/-19/
Gulf-U K./Cont.*	11/	11/-11/6	10/3	11/-11/6
Calif.N. Atlantic (not E. of N. Y.)	....	†70c	....	†70c
Gulf-N. Atlantic** (not E. of N. Y.):				
Heavy Crude & Fuel, (10 to 19.9 gravity)	†30c	†30-32c	....	....
Light Crude, (30 grav. or lighter)	†28c	†28-29c	....	....
Gasoline	....	....	†25c	†25c
Kerosine	....	....	†26c	†26c
Light Fuel	....	....	†26c	†27c

Note: Dirty boat quotations are enlarged to cover, "Fuel and Light Crude" quotations.

*Continental ports in range between Bordeaux and Hamburg, both inclusive.

**Venezuela loading same rate: Tampico 2c to 3c per bbl. additional

†Nominal.

COMING MEETINGS

(*Continued from page* 5)

tion, annual meeting of general board of directors, Tulsa, Okla., Dec. 15.

1937

Society of Automotive Engineers, Book-Cadillac Hotel, Detroit, Mich., Jan. 11 to 15.

Northwest Petroleum Association, North Dakota division, Patterson Hotel, Bismarck, Jan. 18, 19.

Northwest Petroleum Association, Minnesota division, West Hotel. Minneapolis, Jan. 21, 22.

Kentucky Petroleum Marketers Association, Brown Hotel, Louisville, Ky., Feb. 8, 9, 10.

Ohio Petroleum Marketers Association, Hotel Deshler-Wallick, Columbus, Ohio, February 23, 24 and 25.

Wisconsin Petroleum Association, annual convention and equipment show, Milwaukee, Wis., Feb. 23, 24 and 25.

National Petroleum Association, 34th semi-annual meeting, Cleveland Hotel, Cleveland, Ohio, Apr. 15 and 16.

Kill Wisconsin NRA Law

MILWAUKEE, Nov. 5.—A three-judge federal court today ruled the Wisconsin state NRA act unconstitutional by unanimous decision.

Sitting at Milwaukee on the case were Federal District Judge F. A. Geiger; Judge William Sparks, Chicago, of the federal circuit court of appeals; and Federal District Judge John P. Barnes, of Chicago.

While the oil industry in the state had not been operating under provisions of the state code, it had been believed likely that eventually the provisions would be applied to petroleum marketing.

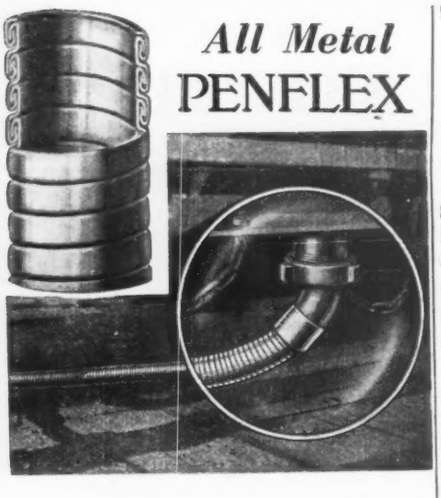
When the act was declared unconstitutional it was said that only the laundries, cleaners and dyers were operating under it.

To Sell Royalty Oil

TULSA, Nov. 7.—Sale of federal royalty oil produced in the Salt Creek, Wyo., field will be made by the Secretary of the Interior in December for a fixed period beginning Jan. 1, 1937. Detailed specifications on quantities offered for sale, form of bids, and other factors which enter into the sale, may be obtained from the Director of the U. S. Geological Survey, Washington, or from the Supervisor, U. S. Geological Survey, Casper, Wyo., or from the Register, U. S. Land Office, Cheyenne, Wyo.

Sealed bids are to be submitted by noon Dec. 1, to the office of the Secretary of the Interior. Present royalty oil in the field amounts to about 14 per cent of the oil production of the field. For the first eight months of 1936 there was produced 497,233.99 barrels of royalty oil.

For the past three years the White Eagle division of Socony-Vacuum Corp. and the Sinclair Prairie Oil Marketing Co. have been purchasing the oil.



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Pyrethrum Flowers

THE second edition of Pyrethrum Flowers contains nearly 400 more references than the first edition published in 1933. The new book contains up-to-the-minute information concerning the growing of pyrethrum flowers; preparation for market; manufacture of powders and extracts from them; chemistry of pyrethrum flowers; storage; uses; past and present experiments in cultivation of the flowers in U. S. and other material.

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NEW REFINING PATENTS

Desulfurizing. No. 2 053 909, issued Sept. 8, 1936; filed June 22, 1934; H. L. Kerr, assignor to Frank Gardner; one drawing; 4 claims.

USE of sodium orthoplumbate as a treating compound for changing mercaptans into disulfides.

The reaction time is said to be but a small fraction of the time required when sodium meta-plumbate is used. The reduced compound may be readily reoxidized electrically for re-use. Provision is made in the invention for an apparatus for the regeneration process.

* * *

Treatment. No. 2 053 752, issued Sept. 8, 1936; filed Jan. 13, 1933; A. C. Vobach and L. P. Foster, assignors to Sinclair Refining Co.; one drawing; one claim.

IN THE production of straight run distillates by distillation from sulfur-containing stocks, the improvement which comprises condensing a vapor mixture, including the distillate fraction, vaporized from the stock to form a condensate and then neutralizing the condensate, avoiding any oxidation of the condensate by positively dispersing in it a dilute aqueous solution of sodium hydroxide containing an excess of sodium hydroxide over that consumed in the neutralization. The condensate, constituting the distillate, is then separated.

* * *

Solvent extraction No. 2 052 971, issued Sept. 1, 1936; filed Nov. 13, 1933; M. R. Fenske and W. B. McCluer, assignors to Pennsylvania Petroleum Research Corp.; 10 drawings; 13 claims.

THE invention pertains particularly to a novel use of a plurality of columns for fractional precipitation featuring increased efficiency. An oil solution is flowed serially through several columns, each having a number of phase contacting paths of relatively small cross sectional area connected in parallel to cause precipitation in these paths. The precipitates are flowed countercurrently in the paths to the solution therein and separated. A portion of the separated precipitates is flowed back to the preceding column countercurrently.

* * *

Treatment. No. 2 055 416, issued Sept. 22, 1936; filed Oct. 8, 1934; F. R. Moser, assignor to Shell Development Co.; no drawing; 8 claims.

THE object is to desulfurize, reduce gum formation, and improve the color of distillates. Distillates are treated with a small quantity of mono- or polysulfonic acid of an aliphatic and or aromatic hydrocarbon, either substitute or not, or with a mixture of such acids. The hydrocarbons are contacted in vapor phase with a solution or suspension of the sulfonic acid in an organic substance inert at the operating temperature (212-482 F.), which makes it possible to carry out the process in the presence of steam without hydrolysis occurring. The concentration of the acids should be preferably below 5 per cent. The pressure is immaterial.

* * *

Cracking. No. 2 052 721, issued Sept. 1, 1936; filed Aug. 3, 1935; E. A. Ocon; 2 drawings; 15 claims.

METHOD and apparatus designed to form two continuous clean streams of different characteristics, i.e., one being of relatively low molecular weight and the other high, for cracking within two separately controlled zones and subsequent common fractionation and condensation.

* * *

Polymerization. No. 2 055 875, issued Sept. 29, 1936; filed June 14, 1934; J. C. Morrell, assignor to Universal Oil Products Co.; no drawings; 3 claims.

PROCESS provides for more effectively utilizing the olefinic constituents of commercial hydrocarbon mixtures, particularly those occurring in cracking gases. Gaseous olefinic hydrocarbons are subjected at elevated temperatures to the action of aqueous hydrogen chloride and a metal capable of reacting with hydrochloric acid and liberating hydrogen therefrom. Operating conditions are controlled to polymerize the gaseous olefins predominantly into gasoline. The metal used is preferably one of the heavier metals above hydrogen in the electrochemical series.

* * *

Revivifying adsorbent clays. No. 2 055 616, issued Sept. 29, 1936; filed Oct. 1, 1934; J. V. Starr, assignor to Standard-I. G. Co.; one drawing; 4 claims.

SPENT clay, after removal of adhering oil by washing with naphtha, steaming, etc., is agitated with a quantity of hydroformed solvent to which may be added an aliphatic alcohol, such as methyl, ethyl, isopropyl alcohol, etc., an aliphatic ketone, such as acetone, methyl-ethyl ketone, etc. or other organic solvents, such as pyridine, chloroform, aniline, etc.

The hydroformed solvent to be used is produced by vapor phase hydrogenation of petroleum distillates boiling below 700 F.

NEW PATENTS

Compiled by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

October 20, 1936

REFINING

Process of desulphurizing petroleum oils—Charles M. Ridgway, Midland, Mich., assignor to Pure Oil Co. Filed Aug. 29, 1933. No. 2,057,918.

Oil refining process—Ernest J. Slater, Enid, Okla., assignor to Champlin Refining Co., same place. Filed July 20, 1934. No. 2,057,923.

Method of hydrogenating carbonaceous materials—Theodor W. Pfirrmann, Germany, assignor to Friedrich Uhde Ingenieur-Buro, Dortmund, Germany. Filed Mar. 19, 1934. No. 2,057,971.

Process of refining hydrocarbon oil—Paul J. Carlisle, Niagara Falls, N. Y., assignor to E. I. du Pont de Nemourc & Co. Filed May 12, 1931. No. 2,058,131.

Method and means for producing anti-knock fluid—Albrecht von Groeling, Los Angeles, Calif., assignor to Seth L. Roberts, Oakland, Calif. Filed Dec. 10, 1929. No. 2,058,194.

MISCELLANEOUS

Liquid-dispensing apparatus—Warren H. De Lancey, Springfield, Mass., assignor to Gilbert & Barker Mfg. Co. Filed Feb. 23, 1935. No. 2,058,138.

Lubricants—Gus Kaufman and Oney P. Puryear, Beacon, N. Y., assignors to Texas Co. Filed Mar. 21, 1934. Nos. 2,058,236 and 2,058,237.

Petroleum lubricant product and method of making, petroleum product and method of making, and lubricant and method of making—Robert C. Moran, Wenonah, and William L. Evers and Everett W. Fuller, Woodbury, N. J., assignors to Socony-Vacuum Oil Co. Filed Oct. 3, Oct. 26, and Nov. 16, 1935. Nos. 2,058,432, 2,058,343, and 2,058,344.

Method and apparatus for transporting hydrocarbon liquids—Arthur H. Riney and Lloyd T. Gibbs, Bartlesville, Okla., assignors to Phillips Petroleum Co. Filed Feb. 17, 1934. No. 2,058,355.

Burner Shipments Show Large Increase

WASHINGTON, D. C., Nov. 3.—Shipments of oil burners amounted to 35,025 in September, 1936, as compared with 20,919 units in August, 1936, according to the monthly report of the U. S. Department of Commerce.

Shipments for September a year ago were 27,143, and in September, 1934, they amounted to 16,964, according to the report. These figures, based on reports from 152 manufacturers, include domestic, commercial and industrial burners.

Mechanical draft domestic oil burners showed total shipments of 30,004 for September, 1936; 17,439 for August, 1936; 23,582 for September, 1935; and 14,268 for September, 1934. These figures do not include distillate burners used in ranges, stoves, water heaters and space heaters.

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Penn. Grade Emblem Protected by Order

OIL CITY, Pa., Nov. 5.—In its first appeal to the Federal Trade Commission for aid in the protection of its emblem, the Pennsylvania Grade Crude Oil Association has been successful in obtaining a "cease and desist" order against the Atlantic Coast Oil Co. of New York for unauthorized and deceptive use of the emblem.

This case is also the first in which the presence of contamination with non-Pennsylvania oil has been established before the trade commission by laboratory tests, it is said.

Action against the Atlantic Coast Oil Co. was taken when that company, despite the loss of its association license and membership, continued to place the association emblem upon its packaged oils and advertising material. According to the association, numerous laboratory tests at Pennsylvania State College and at the U. S. Bureau of Standards revealed the oil sold by this company was adulterated.

The complaint of the FTC was made public June 30, with the Atlantic Coast Oil Co. first entering a general denial and later filing an admission of all charges in the complaint. A formal cease and desist order was issued Sept. 25, 1936.

The commission's order, pertaining to the sale and distribution of motor oils and greases in interstate commerce, required the Atlantic Coast Oil Co. to "cease and desist" from:

"(1) Representing through the use of the emblem of the Pennsylvania Grade Crude Oil Association that it is a member of said association unless and until such is the case.

"(2) Representing through the use of the emblem of the Pennsylvania Grade Crude Oil Association, the phrase, 'Guaranteed 100 Per Cent Pennsylvania Oil, Specially Processed,' the word 'Pennsylvania' or any derivation thereof, the phrase 'Permit No. . . . .', or the word 'License' together with said emblem, that the oil or greasers being offered for sale or sold by it are pure, unadulterated Pennsylvania oils or greases produced in the Pennsylvania strata of oil fields, unless and until such is the case

"(3) Representing, through the use of the letters and numbers developed by the Society of Automotive Engineers to indicate relative viscosities in motor oils, that the products being offered for sale and sold have the viscosities indicated by said numbers and letters, when such is not the case."

Joins Consumers Oil Service

PAULSBORO, N. J., Nov. 9.—F. J. Mitchell and P. B. Concelman, formerly with Lincoln Oil Corp., Lincoln Oil Management and Charles F. Baily & Co., are now with Consumers Oil Service, Inc., at the old location, Crown Point Road, Paulsboro.

Market Cleanup Planned By Retail Dealers

LOS ANGELES, Nov. 7.—A new effort to clean up the southern California retail gasoline markets was initiated the past week by Retail Petroleum Dealers Association. The California Fair Trade Act will be used in an effort to prevent "selling below cost" and "secret payment or allowance of rebates."

Attorneys for the dealers association notified 33 independent resellers in the Los Angeles area that a cost survey made in the trading area of metropolitan Los Angeles showed conclusively that all retail dealers selling their gasoline below 13.9 cents a gallon were in fact selling below their cost of doing business. The notice further pointed out that the cost survey was borne out by the opinion of more than 90 per cent of the industry.

This group, which was currently selling gasoline at less than 13.9 cents was also given notice that counsel had been retained for the purpose of filing, in the name of the association, any action needed to enjoin the continuance of below cost selling.

The dealers association employed accountants to determine the actual cost of selling gasoline in the Los Angeles area. The result of this survey indicated the cost was 15 per cent of the gross, or about 1.9 cents a gallon on a retail price of 14 cents. The independent competitive tank wagon price on gasoline is 12 to 12.5 cents, which indicates a retail price of not less than 14 cents on the basis of this cost analysis.

Prosecution is threatened under an act relating to unfair competition and discrimination and making such practices misdemeanors. This act provides that it shall be unlawful for any person or firm to sell below cost or to give away any article or service for the purpose of injuring competitors and destroying competition. It also forbids secret rebates not extended to all purchasers upon like terms and conditions.

Numerous service station operators have a practice of giving coupons good for half or a full cent on the next purchase of gasoline at that station. These dealers would be included in the charge of offering discounts to some customers, not extended to all.

This action will not affect cutting under the canopy as long as the cut is extended to all customers and the same accounts cannot be charged with selling below cost as long as the discount does not exceed 2 cents a gallon on a 4-cent margin. Legal action against dealers not meeting the minimum figure of 13.9 cents is not expected for ten days. The attorneys handling this matter have been successful in some 20 suits brought against dealers in other industries for selling below cost and for giving rebates.

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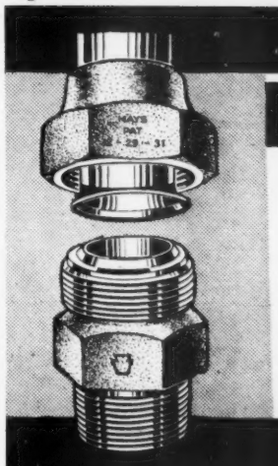

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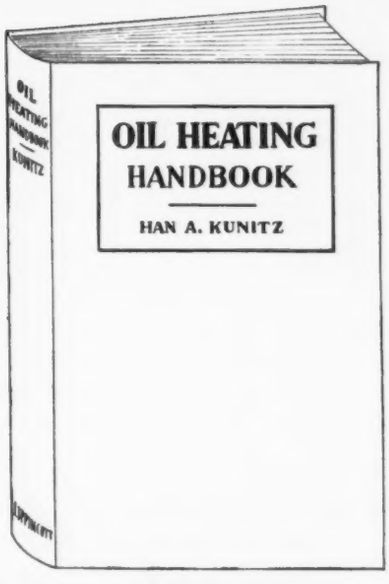

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TRADE-MARKS

Pub. Nov. 3, 1936

VANEX, Ser. No. 382,150. Murray J. Bliss, doing business as Glass-Glow Company, Indianapolis, Ind. Filed Aug. 14, 1936.

For Liquid Preparation for Cleaning and Polishing Glass and Glass Surfaces, Especially Automobile, Windshields and Window Glass, Window Lights in General, Chromium Plated Surfaces.

KLEERPANE, Ser. No. 382,658. D. A. Collins Mfg. Co., Inc., Brooklyn, N. Y. Filed Aug. 28, 1936.

For Window Cleaning Preparations.

HI SPEED, Ser. No. 378,434. Hickok Oil Corporation, Toledo Ohio. Filed May 14, 1936.

For Automobile Filling Station Supplies of Liquid and Semi-Liquid, Largely Petroleum and Hydrocarbons and Compounds Therefrom. Adapted as Fuel and Lubricating Oils and Greases.

BOOSTER MOTOR OIL. Ser. No. 381,184. Windsor-Lloyd Products, Inc., doing business as Booster Chemical and Engineering Company, Baltimore Md., and Wilmington, Del., Filed July 18, 1936.

("Motor Oil" disclaimed)

For Motor Lubricating Oils.

DOUBLE ACTION, Ser. No. 382,092. H. Clay Glover Company, Inc., New York, N. Y. Filed Aug. 12, 1936.

For Insecticide.

GARDEN-PAK, Ser. No. 380,198. General Chemical Company, New York, N. Y. Filed June 25, 1936.

For Insecticides, Fungicides, and Preparations for Control of Plant Pests.

MOBILANE, Ser. No. 382,637. Socony-Vacuum Oil Company, Inc., New York, N. Y. Filed Aug. 27, 1936.

For Liquid Petroleum Gases.

Canadian Refiners

OTTAWA, Nov. 3.—The growth of the petroleum refining industry in Canada from 11 refineries in 1921 to 45 in 1935, turning out products valued 15 years ago at $51,565,403 as compared with $79,176,081 last year, is reviewed in the summary of the petroleum industry in 1935 published by the Dominion Bureau of Statistics, Census of Industry, Department of Trade and Commerce of Canada.

Highway Fund Diversion
$150 Million In 1935

NEW YORK, Nov. 7.—The diversion of $146,449,711 from highway funds for general purposes in 35 states the past year, thus keeping 150,000 highway workers out of employment, curtailing highway work and reducing trade and wages in this branch of industry by that amount, is reported in an analysis by the American Petroleum Industries Committee of reports by the U. S. Bureau of Public Roads on gasoline taxes and motor vehicle registration fees and their diversion during 1935.

This is an all-time record for diversion of road money and represents an increase for 1935 of $24,000,000.

As much as 58.7 cents of the motor taxpayer's highway dollar in some states was diverted last year for purposes such as airports, parks, oyster beds, navigation, service of non-highway debts, schools, unemployment relief, etc.

New York diverted the largest amount, or $58,526,852 out of $99,740,000 collected from gasoline sales taxes, registration fees, drivers' licenses, and so on. In South Dakota 42.3 cents of every highway dollar was used for non-highway purposes, while in Massachusetts 40.3 cents was diverted. Other large-scale diverting states are Florida and Georgia, where more than 30 cents out of every highway dollar went to purposes other than highways; and Delaware, North Dakota, Oklahoma and the District of Columbia, which spent more than 20 cents each for general purposes.

On the basis of each $1 spent for highways, $3.15 in wages and trade is distributed in 24 industries and the committee estimated that 150,500 workers would have been provided jobs last year with these diverted funds, and a loss in wages and trade of $462,000,000 would have been avoided.

The following table shows the total of motor tax revenue collected in 35 states, the total amount diverted by each state, the portion of the highway tax dollar which was used for non-highway purposes and the percentage of change from 1934:

Automotive Tax Collections and Diversion, 1935

State	Collected for Road Financing from Gasoline Tax, Registration Fees, etc.	Diverted to Purposes Other Than Highway Financing	Proportion of Highway Tax Dollar Diverted (Cents)	Increase or Decrease from 1934, Per Cent
Alabama	$13,797,000	$663,183	4.8	— 3.7
Arizona	3,126,000	192,344	1.7	— 37.5
Arkansas	10,719,000	68,118	0.6	— 72.7
California	50,534,000	1,282,510	2.5	+5700.0
Colorado	8,217,000	984,277	12.0	— 64.8
Connecticut	14,010,000	103,375	0.7	— 0.8
Delaware	2,488,000	561,169	22.6	.....
Florida	22,781,000	6,986,495	30.8	+ 10.4
Georgia	17,020,000	5,582,148	32.8	+ 133.6
Illinois	49,136,000	7,505,978	15.3	— 12.3
Indiana	27,149,000	2,102,591	7.7	+ 9.9
Louisiana	12,908,000	1,869,184	14.5	+ 4.9
Maryland	12,378,000	463,148	3.7	+ 276.0
Massachusetts	23,654,000	9,527,688	40.3	— 5.2
Michigan	40,740,000	352,161	0.9	— 8.2
Minnesota	18,302,000	156,098	0.9	+ 187.9
Mississippi	8,253,000	775	.....	.....
Nebraska	11,711,000	1,113,218	9.5	.....
New Jersey	34,808,000	5,821,030	16.7	+ 39.4
New Mexico	3,967,000	390,432	9.8	+ 31.6
New York	99,740,000	58,526,852	58.7	+ 28.8
North Carolina	24,973,000	1,757,462	7.0	+ 4.4
North Dakota	3,704,000	905,776	24.4	— 17.7
Ohio	61,322,000	9,726,633	15.9	+ 3.2
Oklahoma	15,735,000	3,494,006	22.2	+ 9.8
Pennsylvania	72,862,000	5,161,045	7.1	+3180.0
Rhode Island	4,519,000	671,750	14.9	— 3.7
South Carolina	10,433,000	140,880	1.3	+2305.0
South Dakota	5,572,000	2,356,601	42.3	+ 23.6
Tennessee	18,500,000	2,654,785	14.4	— 20.1
Texas	49,387,000	8,290,061	16.8	+ 5.1
Virginia	18,492,000	28,849	0.2	— 50.0
Washington	15,956,000	1,002,791	6.3	+ 5.8
West Virginia	10,611,000	2,392	22.5	.....
Wisconsin	26,968,000	5,089,317	18.9	— 2.1
Dist. of Columbia	3,102,000	924,589	29.8	+ 46.7

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TRANSACTIONS IN OIL STOCKS ON NEW YORK STOCK EXCHANGE

1935 High	1935 Low	1936 High	1936 Low	Listed Shares	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended Nov. 7, 1936 Sales Shares	High	Low	Last	Week's Change
80	48½	125½	75	788,675	N.P.	Amerada Corp.	50cQ	Oct. 31, 36	7,300	107⅜	97	105	+ 4½
44	29¾	51¼	36	2,290,412	$25	Associated Oil Co.	25c	May 1, 36	120	45	43½	45	+ ½
28	20½	35¼	26⅝	2,664,901	25	Atlantic Refining Co.	25cQ	Sept. 15, 36	32,900	33	30⅝	32½	+ 1⅜
.....	.....	115	109	.....	.....	do pfd A.	....	.....	300	115	113½	114	+ ½
14¾	5⅞	20	14½	2,131,090	5	Barnsdall Corp.	20c	Nov. 2, 36	37,800	19⅝	18	19⅝	+ 1¼
9⅞	6¾	30	8¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	20	*30	30	30	0
12¼	6½	15¼	11½	13,983,287	N.P.	Consolidated Oil Corp.	15c	Aug. 15, 36	85,400	14⅜	13⅛	14¼	+ ⅞
112½	108½	106½	101	132,771	$100	do pfd.	$1.25Q	Sept. 1, 36	.....	.....	.....	.....	.....
35	15½	39	28½	4,682,662	5	Continental Oil Co.	50c	Oct. 31, 36	59,400	*39	35⅝	38½	+ 2½
22½	11¾	34¾	21¼	413,333	$10	General Asphalt Co.	....	.....	.....	.....	.....	.....	.....
7	1½	12¼	6⅛	1,098,618	25	Houston Oil Co. v.t.c.	....	.....	45,500	10⅞	9⅜	10½	+ 1
5¼	2½	14¼	4½	1,207,132	10	Indian Refining Co.	....	.....	4,700	*14¼	13½	14	+ ⅜
1⅞	⅝	.....	.....	1,309,060	N.P	Louisiana Oil Ref'g. Corp.	....	.....	.....	.....	.....	.....	.....
15	4½	51½	13	40,000	$100	do pfd.	....	.....	520	39	35¼	37	— ¼
3	1	6¾	2¼	330,000	N.P.	Maracaibo Oil Exploration Co.	....	.....	2,200	4	3½	4	+ ¼
20⅛	9½	30⅞	17¼	1,855,912	$10	Mid-Continent Pet. Corp.	40c	June 1, 36	36,100	*30⅞	27⅞	30⅝	+ 2¼
17⅜	10⅜	26¼	16¾	1,399,345	N.P.	Mission Corp.	....	.....	7,100	24	22¼	24	+ 2
14¼	9⅛	17⅛	12¼	6,563,377	N.P.	Ohio Oil Co.	25c	June 15, 36	77,900	15	13⅜	14⅞	+ 1⅜
21	10¾	20⅜	12¼	4,699,885	$5	Pan Amer. Pet. & Transp. Co.	....	.....	200	13	13	13	0
1⅞	½	4¼	1⅜	199,370	N.P.	Panhandle Prod. & Ref'g. Co.	....	.....	800	2⅝	2¼	2⅝	+ ⅜
20	6½	74½	18½	17,994	$100	do pfd.	....	.....	110	60	56	57½	+ 1½
14	7⅝	18	12¾	2,153,444	5	Petroleum Corp. of America.	25c	Sept. 30, 36	7,700	16¼	15	16¼	+ ⅞
40	13⅜	49⅝	38½	4,152,836	N.P.	Phillips Petroleum Co.	25cQC	Sept. 1, 36	52,700	48¾	44⅝	48¼	+ 3⅜
1¼	¼	2¼	⅞	1,184,817	$25	Pierce Oil Corp.	....	.....	.....	.....	.....	.....	.....
8	2¾	17	8	150,000	100	do pfd.	....	.....	4,500	13¼	11¼	13¼	+ 2¼
1¾	⅝	2½	1⅛	2,500,000	N.P.	Pierce Petroleum Corp.	.....	.....	6,900	2⅜	2	2⅜	+ ⅜
13	6½	17⅞	11⅞	1,050,000	$5	Plymouth Oil	25cQ	Sept. 30, 36	12,300	*17⅞	16⅝	17⅝	+ ½
17	5⅞	24⅞	16¼	3,038,370	N.P.	Pure Oil Co.	....	.....	112,300	20¼	18⅝	20	+ 2
103	34¾	118	91¼	167,640	100	do 6% pfd.	$1.50	Oct. 1, 36	900	99½	97¼	99	+ 2
119⅞	49⅝	133½	103	130,000	100	do 8% pfd.	$2.00	Oct. 1, 36	690	110½	108	109¾	+ ⅞
48½	29½	57⅝	48⅝	425,342	a	Royal Dutch Co. (N. Y. shares).	$1.70	Aug. 1, 35	.....	.....	.....	.....	.....
36⅞	20¾	42½	30½	1,244,383	N.P.	Seaboard Oil of Del.	25c	Sept. 15, 36	10,600	35⅝	32½	34⅜	+ 1⅜
39	20⅜	48	38½	56,148	£2	Shell Transport & Trading Co.	$1.237	July 24, 35	.....	.....	.....	.....	.....
16½	5½	28	14¾	13,070,625	N.P.	Shell Union Oil Corp.	.....	.....	23,800	*28	26¼	27¾	+ 1½
111	63⅛	126½	110⅛	400,000	$100	do pfd. w.w.	$1.37½	Oct. 1, 36	5,300	*126½	125¾	126¼	+ ¼
18¾	4¾	6¾	3½	461,000	10	Simms Petroleum Co.	**$1.00	July 31, 36	500	4	4	4	0
20½	6½	37¼	19½	1,008,549	15	Skelly Oil Co.	.....	.....	11,200	*37¼	34½	36¾	+ 1¾
116¼	60	132	116	120,000	100	do pfd.	$1.50	Nov. 2, 36	700	121	120½	121	+ 1
15¾	10⅝	17½	12½	31,151,075	15	Socony Vacuum Oil Co.	25c	Sept. 15, 36	136,800	*17½	16¾	17⅜	+ ½
116	111	113½	109‡	764,925	100	S. O. Export Corp. pfd.	$2.50 S.A.	June 30, 36	.....	.....	.....	.....	.....
41⅛	27¾	47⅝	35	13,014,754	N.P.	S. O. California.	30c	Sept. 15, 36	47,400	41¾	38¾	41½	+ 2¼
33⅝	23	44¾	32¼	15,215,677	$25	S. O. Indiana.	50c	Sept. 15, 36	50,000	*44¾	40⅜	44	+ 3⅝
32	20	30¾	25	145,441	10	S. O. Kansas.	.....	.....	300	30	29½	30	+ ½
52⅜	35¾	70⅜	51⅛	26,200,825	25	S. O. New Jersey.	75c	June 15, 36	96,700	*70⅛	67	67⅝	— ⅜
77	60½	91	72	2,019,093	N.P.	Sun Oil Co.	25cQ	Sept. 15, 36	1,400	80½	79½	80	0
121	115½	124	118	100,000	$100	do pfd.	$1.50Q	Sept. 1, 36	110	122½	121	122½	0
3½	1⅝	6¾	3	966,979	$1	Superior Oil Corp. (Del.)	....	.....	21,400	4¾	4	4⅝	+ ½
30¼	16½	50⅝	28⅞	9,851,236	$25	The Texas Corp.	50c	Oct. 1, 36	51,700	*50⅜	46½	49⅞	+ 2⅝
9¼	3¼	15¼	7⅛	930,570	10	Texas Pacific Coal & Oil Co.	25c	Aug. 1, 36	27,200	13⅞	12½	13⅝	+ ⅞
15⅞	7⅝	20⅞	14¾	5,998,919	N.P.	Tide Water Associated Oil Co.	15c	Sept. 1, 36	68,900	*20⅞	19¼	20⅞	+ 1⅜
104½	84	106½	100⅜	695,503	$100	do pfd. C. T. V.	$1.50	Oct. 1, 36	900	105	104½	104½	— ¼
48	26¾	60	51	2,191,823	N.P.	Tide Water Oil Co.	45c	Aug. 31, 36	.....	.....	.....	.....	.....
24	14¾	28½	20¼	4,386,070	25	Union Oil of California.	25cQ	Aug. 19, 36	10,400	24⅜	23	23⅞	+ ⅝
26½	20¼	31⅝	22⅝	1,200,000	N.P.	Union Tank Car Co.	30cQ	Sept. 1, 36	800	29½	28⅞	29¼	+ ¼
1⅝	⅝	2⅞	⅝	759,538	N.P.	Warner Quinlan Co.	....	.....	2,400	1⅝	1¼	1¼	— ⅛
3⅛	1	5¼	2¾	431,443	$5	H. F. Wilcox Oil & Gas Co.	....	.....	2,200	3½	3⅛	3½	+ ⅛

*New high. †New low. Ex-div. **Dividends of liquidation. ‡Stock dividend. a Par 33 1/3 florins.
C Paid 25c extra Sept. 1, 36.

STANDARD OIL STOCKS ON NEW YORK CURB MARKET

1935 High	1935 Low	1936 High	1936 Low	Listed Shares	Par Value	Company	Current Dividend	Last Div. Paid	Transactions Week Ended Nov. 7, 1936 Sales Shares	High	Low	Last	Week's Change
16	6	18	12¼	36,000	$25	Borne Scrymser Co.	75c	Oct. 15, 36	.....	.....	.....	.....	.....
42½	30½	50	39¾	200,000	50	Buckeye Pipe Line Co.	75cQ	Sept. 15, 36	500	46¾	45	46¾	+ 1¾
157	115	124¾	108⅞	120,000	25	Chesebrough Mfg. Co.	$1.50	Sept. 30, 36	550	118¼	115	118	— 1⅞
23¾	10	34¾	19⅞	6,974,356	$5	Creole Petroleum Co.	25c	July 15, 36	23,300	28⅝	27¼	28⅝	+ 1⅜
38	33¼	47	39	50,000	$50	Eureka Pipe Line Co.	$1Q	Nov. 2, 36	.....	.....	.....	.....	.....
64	44	76½	57	8,985,662	N.P.	Humble Oil & Refg. Co.	50cQ	Oct. 1, 36	19,900	74¼	65	71⅞	+ 5⅛
22½	15⅝	24½	20	26,965,078	N.P.	Imperial Oil Ltd.	°25cS.	June 1, 36	11,900	23¼	22¼	23	+ ½
22½	15⅞	24⅝	20⅛	.....	N.P.	do registered.	25cQ	June 1, 36	100	22½	22½	22¼	— ⅜
6¼	3⅜	9¾	5½	309,000	$10	Indiana Pipe Line Co.	20c**	May 15, 36	100	7¾	7¾	7¾	— ¼
39¾	28	39⅝	32⅞	14,324,088	N.P.	International Pet. Co.	°75cS.	June 1, 36	10,400	36¾	36⅛	36⅜	— ⅛
.....	.....	36⅛	33⅛	.....	.....	do registered.	....	.....	.....	.....	.....	.....	.....
10⅝	6¼	15¾	9¼	509,000	$12.50	National Transit Co.	40c	June 15, 36	1,100	11¾	11⅜	11¾	+ ⅜
4⅞	3	6¼	4¼	100,000	5	New York Transit Co.	15c S.A.	Apr. 15, 36	100	5	5	5	0
8	5¼	9¼	4⅞	120,000	10	Northern Pipe Line Co.	15c	July 1, 36	200	8⅝	8¼	8⅝	+ ⅜
107¼	90¼	110⅝	104½	562,122	100	Ohio Oil Co. pfd.	$1.50Q	Sept. 15, 36	900	109⅜	109	109⅜	+ ⅜
11	5½	8	5½	400,000	25	Penn Mex. Fuel Co.	....	Dec. 22, 33	.....	.....	.....	.....	.....
84⅓	21⅝	40½	32½	1,142,671	25	South Penn Oil Co.	60c	Sept. 30, 36	500	40⅝	40	40½	+ ½
5	3⅛	7⅛	3⅞	100,000	10	Southern Pipe Line Co.	10c	Sept. 1, 36	100	4¼	4¼	4¼	— ⅛
56	45¼	60	45	35,000	50	South West Pa. Pipe Lines.	$1.00	Oct. 1, 36	50	45	†45	45	+ ¼
24	18	23⅛	17⅛	2,604,801	10	S. O. Kentucky.	35c	Sept. 15, 36	4,900	21	20	21	+ ½
12	7¼	14⅝	11	182,803	25	S. O. Nebraska.	....	June 20, 34	400	12⅜	12⅜	12⅜	+ ⅛
23⅝	11½	40	21¾	753,740	25	S. O. Ohio.	25c	Oct. 15, 36	4,000	39¾	37¼	38⅞	0
99½	89	107⅛	97	120,000	100	do 5% pfd.	$1.25Q	Oct. 15, 36	150	105	104⅜	105	0
6	2¼	10	5⅝	34,158	25	Swan Finch Oil Corp.	87½c	Mar. 16, 36	100	8¾	8¾	8¾	+ ½

*New high. †New low. °Imperial Oil Spec. 37½c June 1, 36. International Pet. Spec. 50c June 1, 36
x Ex dividend. **15c regular; 5c extra.

Canned Oil Features Campaign

CHICAGO—All distributing points of Standard Oil Co. of Indiana have been stocked with canned oil, and the fall campaign advertising motor oil features the company's premium oil, Iso-Vis "D" in cans.

This fall marks the initial venture of the Indiana company into the marketing of motor oil in cans. As yet, sales through this medium are confined to the premium brand. Polerine and Stanolind, second and third grade oils still are sold only in bulk.

A 5-cent premium is asked for Iso-Vis in cans, over the same grade when sold in bulk.

NEW YORK CURB BONDS

Week Ending Nov. 7

	High	Low	Last	Change
Cities Serv. 5s '66	75½	73	73	—1¼
Cities Serv. 5s '50	75¾	72⅛	73	—3⅛
Cities Serv. G. 5½s '42	103	102¼	102½	0
Empire O & R 5½s '42	89¾	87½	89¾	+2
Valvoline Oil 7s '37	100	100	100	0

OIL AND ROYALTY STOCKS ON NEW YORK CURB

1935 High	1935 Low	1936 High	1936 Low	Par Value	Company	Transactions Week Ended Nov. 7, 1936 Sales Shares	High	Low	Last	Week's Change
1/16	1/16	1 1/16	1/16	N.P.	American Maracaibo	5,100	1	7/8	1	+ 1/8
3 1/8	1/8	7 1/8	3 1/4	N.P.	Arkansas Nat. Gas	4,200	5 7/8	5 3/8	5 1/2	0
3 3/4	1/8	7 3/4	3 1/4	N.P.	do A	12,500	5 7/8	5 1/4	5 3/4	+ 1/8
7 1/2	2 1/4	10 1/4	7 1/8	$10	do pfd	6,300	9 3/4	9 3/8	9 5/8	0
16 3/4	14 1/2	32 3/4	16 1/2	N.P.	British Amer. Oil coup.	400	*32 3/4	32 1/2	32 1/2	+ 5/8
....	....	26 1/4	21 1/2	N.P.	do registered	.....	....	....	....	....
4 1/4	1 1/8	4 7/8	2	$1/4	Carib Syndicate	9,500	2 1/2	2 1/8	2 1/4	— 1/4
3 1/4	3/4	7 1/8	3	N.P.	Cities Service	83,200	4 1/4	3 7/8	4	— 1/4
47 1/4	6 1/2	66	41 1/2	$100	do pfd	4,100	52	47 3/4	50	— 3
4 1/2	3/4	6 1/2	3 3/4	10	do pfd. B	300	4 7/8	4 5/8	4 5/8	— 1/2
63	6	63	41	100	do pfd. BB	10	45	45	45	— 5
2 1/8	1/2	4	1/8	N.P.	Colon Oil Corp.	.....	....	....	....	....
1 1/2	1/4	6 1/4	1/4	N.P.	Columbia Oil & Gas vtc.	88,900	*6 1/4	4 1/2	6 1/4	+ 1 1/4
3	1	5	2	$1	Consolidated Royalty	2,400	3 1/8	2 1/2	3	+ 3/4
1 1/8	1/4	4 1/8	1 1/2	N.P.	Cosden Oil	5,700	3 1/4	2 7/8	3	— 1/8
6 1/4	3/4	27 1/2	6 1/2	$100	do pfd	1,500	26 1/2	24 1/4	24 1/2	— 2 1/2
2 1/8	5/8	2 3/4	1 3/4	N.P.	Crown Central Pet.	12,800	2	1 7/8	1 7/8	— 1/8
8 7/8	4	15 1/4	9	N.P.	Darby Petroleum	3,400	*15 1/4	13 5/8	14 3/8	+ 7/8
2	1/4	6 3/4	1 7/8	N.P.	Derby Oil & Refg.	2,400	6 1/8	6	6	+ 1/8
20	20	81	25 1/2	N.P.	do pfd	150	81	80	80	0
74 3/4	50 1/4	117	72	$25	Gulf Oil Corp.	17,700	*117	102 5/8	115	+11
4 1/4	1 3/8	6 1/4	2 3/8	N.P.	Indian Ter. Illg. Oil A	200	3 1/4	3	3 1/4	0
4 1/4	1 1/8	6 1/2	3	N.P.	do B	200	3 1/8	3 1/8	3 1/8	— 1/4
3	1 7/8	5 5/8	2 3/8	N.P.	Kirby Petroleum	500	4 5/8	4 3/8	4 1/2	+ 1/8
3/4	1/4	2	1/2	$25	Leonard Oil Dev.	2,100	1/2	1/2	7/8	+ 1/8
8 1/4	3 1/2	15 1/4	7 3/8	N.P.	Lion Oil Refg.	5,300	14 7/8	14 1/2	14 1/2	— 3/8
10 7/8	4 1/2	14 1/4	9 7/8	N.P.	Lone Star Gas	11,300	12 3/4	11 5/8	12 3/4	0
19	4	22 1/4	13 3/4	N.P.	Margay Oil Co.	200	17	16 1/2	17	+ 3 1/4
2 1/4	7/8	4 1/8	1 1/2	N.P.	Mexico-Ohio Oil	400	1 5/8	1 5/8	1 5/8	— 1/8
3 5/8	1 1/8	4 3/4	1 1/8	N.P.	Michigan Gas & Oil	200	3	2 3/4	2 3/4	— 3/8
3 1/8	1/8	6	3	N.P.	Mid. States Pet. A vtc.	9,100	5 1/2	4 1/4	5 3/8	+ 3/4
1/4	1/4	2 5/8	1/4	N.P.	do B vtc.	6,500	1 5/8	1 1/4	1 5/8	+ 1/8
1/8	1/4	1/4	1/4	$1	Mountain & Gulf	.....	....	....	....	....
5 3/4	4 1/8	8 3/8	5	10	Mountain Producers	5,800	5 1/4	5 1/8	5 1/4	0
20	11 3/4	23	17 3/4	N.P.	National Fuel Gas	3,100	20	18 5/8	20	+ 1/4
3 1/4	2	4 1/8	2 1/8	$5	New Bradford Oil	3,200	3 7/8	3 1/2	3 5/8	+ 1/4
4	2	8 3/8	3 3/8	N.P.	North Central Texas	300	5 1/2	5 1/2	5 1/2	— 1/8
1/8	1/8	1/8	1/8	N.P.	North European	1,300	1/4	1/8	1/4	+ 1/8
12 1/4	9 1/8	15 1/4	13 1/2	N.P.	Oil Stocks Ltd. A	600	15	14 5/8	15	0
4 1/4	1 1/4	6 5/8	3 1/4	N.P.	Pantepec of Venezuela	37,600	5 7/8	5 1/4	5 7/8	+ 1/2
1/4	1/8	1	1/8	N.P.	Producers Royalty	2,100	3/8	1/4	1/4	— 1/8
3 1/4	1/2	15 1/2	3	N.P.	Red Bank Oil	2,200	11	10 3/8	10 3/4	+ 1/4
1/2	1/8	1 1/2	1/8	N.P.	Reiter-Foster Oil	700	3/4	11/16	3/4	+ 1/8
2 7/8	1/2	2 3/4	1/4	$25	Richfield Oil pfd	.....	....	....	....	....
5	1 1/2	19 1/4	4 1/2	$1	Root Petroleum	2,900	15 3/8	14 1/2	15	+ 1/4
15 1/8	8	23	14 1/2	20	do conv. pr. pfd	100	18 1/2	18 1/2	18 1/2	— 1/2
....	....	39	26 3/4	$10	Royalty Corp. pfd	.....	....	....	....	....
2 1/2	5/8	4 3/4	1 7/8	N.P.	Ryan Consolidated	500	3 1/4	3	3 1/4	+ 1/8
1	1/8	2 1/4	1/8	$10	Salt Creek Consolidated	.....	....	....	....	....
7 1/2	5 1/2	10	5 3/4	10	Salt Creek Prod.	.....	....	....	....	....
6 1/8	4 3/4	11 1/4	6 1/4	N.P.	Southland Royalty	500	8 1/4	8 1/8	8 1/4	+ 1/4
2 1/8	7/8	5	2 5/8	$5	Sunray Oil	10,700	3 5/8	3	3 1/2	+ 3/8
....	....	49	47 1/2	....	do pfd	.....	....	....	....	....
4	2	6 7/8	4 1/4	$1	Swiss Oil Corp.	.....	....	....	....	....
6 1/8	5	9 3/4	4 1/2	N.P.	Texon Oil & Land	2,300	6 1/4	5 3/4	6 1/4	+ 1/2
....	....	7	2 3/4	....	Venezuela Mex.	.....	....	....	....	....
2 1/4	1/2	3 1/2	1 1/4	$1	Venezuela Petroleum	1,200	1 1/2	1 3/8	1 1/2	+ 1/8
6 1/8	3 1/2	11	5 5/8	$1	Woodley Petroleum	2,400	9 3/8	8 5/8	9 1/8	+ 3/8

*New high. †New low.

OIL DIVIDENDS

Dividends Waiting Payment

Company	Amount	Payable
Buckeye Pipe Line Co.	**$1.00	Nov. 20	Dec. 15
Canfield Oil Co. res. a	$1.00	Nov. 10	Nov. 16
Cons. Oil $5 pfd. q	$1.25	Nov. 16	Dec. 1
Cons. Oil Corp. q	15c	Oct. 15	Nov. 16
do extra	25c	Oct. 15	Nov. 16
Indiana Pipeline	20c	Oct. 23	Nov. 14
do extra	20c	Oct. 23	Nov. 14
McColl Frontenac Oil q.	20c	Nov. 14	Dec. 15
Mid-Cont Pet. Corp.	*75c	Nov. 2	Dec. 1
Ohio Oil	35c	Nov. 14	Dec. 15
do pfd. q	$1.50	Nov. 14	Dec. 15
Phillips Pet. b	$1.00	Nov. 16	Dec. 1
Seaboard Oil q	25c	Dec. 1	Dec. 15
Socony-Vacuum Oil sp.	25c	Nov. 18	Dec. 15
Stand. of Calif. q	25c	Nov. 16	Dec. 15
do extra	5c	Nov. 16	Dec. 15
Stand. of Ind. q	25c	Nov. 16	Dec. 15
do extra	$1.00	Nov. 16	Dec. 15
Stand. of N. J. semi	50c	Nov. 16	Dec. 15
do extra	75c	Nov. 16	Dec. 15
Sun Oil Co. stock	6%	Nov. 25	Dec. 15
do q	25c	Nov. 25	Dec. 15
do pfd. q	$1.50	Nov. 11	Dec. 1
Tide Water Assoc.	15c	Nov. 10	Dec. 1
Union Oil of Calif. q	25c	Oct. 17	Nov. 10

*Paid 40c June 1, 36.
**Paid 75c quarterly previously.
a Last paid $1 Nov. 25, 33.
b Unclassified.

CLEVELAND STOCK EXCHANGE

Transactions Week Ended Nov. 7, 1936

Company	Sales	High	Low	Last	Change Over Week
Canfield Oil	....	....	....	....	....
do pfd	....	....	....	....	....
Nat'l Refining	200	8	8	8	+ 3/4
do pfd	91	104	103	104	0

PITTSBURGH STOCK EXCHANGE

Transactions Week Ended Nov. 6, 1936

Company	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas	14	5 1/2	5 1/2	5 1/2	+ 1/4
do pfd	54	9 1/2	9 1/4	9 1/2	+ 1/4
†Cities Serv	248	4 1/2	3 7/8	4 1/8	— 1/4
Col. Gas & Elec.	1,814	20 1/8	18 1/8	18 5/8	—1 5/8
†Col. Oil & Gaso.	414	5 3/8	4 1/2	5 3/8	+ 3/8
Devonian Oil	439	18 5/8	18 1/2	18 5/8	+ 1/8
†Gulf Oil of Pa.	70	117	102	117	+16
Lone Star Gas	4,000	12 3/4	11 5/8	12 1/2	— 1/4
Mountain Fuel Supply	2,120	6	5 3/4	5 7/8	— 1/8
Pgh. Oil & Gas	1,605	1 1/4	1 1/8	1 1/8	— 1/8
Plymouth Oil	90	17 3/8	17 3/8	17 3/8	+ 1/4
Shamrock Oil & Gas	8,157	6 3/4	5 1/8	6 5/8	+1 1/2
do pfd	1,550	14	11 1/8	14	....
†Stand. Oil of N. J.	2,053	70 1/4	67 1/4	67 1/4	—1

†Unlisted.

NEW YORK BONDS

Week Ended Nov. 7

	High	Low	Last	Change
Houston Oil 5 1/2s '40	102 3/4	102	102 1/2	+ 1/4
Pan Amer. Pet. of Calif. 6s	41 1/2	39 1/2	41	+ 7/8
do 6s ctfs	41 7/8	39 1/4	41	+ 1/4
Pure Oil 4 1/4s '50 w.w.	119 3/4	114 3/4	118 3/4	+3 3/4
do x.w.	104 1/2	104 1/4	104 1/2	— 1/4
Richfield Oil of Calif. 6s	45 1/4	43	44 5/8	+ 1/8
do 6s ctfs	45	43	44 1/2	+ 1/2
Shell Union Oil 3 1/2s '51	101	98 7/8	100 3/4	+1 3/4
Skelly Oil 4s '51	102 1/2	101 1/4	102 1/2	+1 1/2
Socony-Vacuum 3 1/2s '50	105 7/8	105 1/4	105 3/4	+ 1/4
S. O. N. J. 5 1/2s	100	99 1/2	100	+ 1/2
Union Oil of Calif. 6s A	121 1/2	121 1/4	121 1/4	0
do 4s '47	117	116 3/4	117	0
Warner-Quinlan 6s	44 1/2	43	43 1/2	—1

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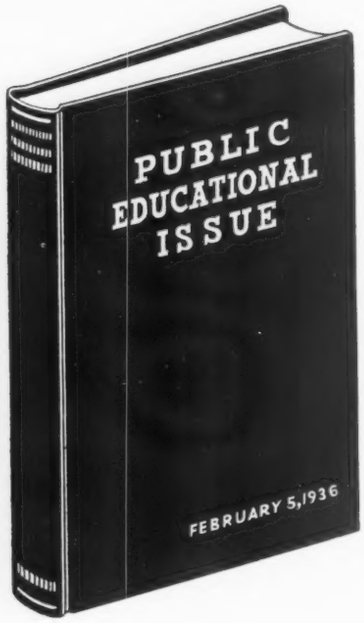

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Oil Companies Boost Dividends As 1936 Earnings Soar

OIL company stockholders apparently are going to share in the higher earnings of the companies if the divided action taken by several of the larger units in the industry the past week is any criterion. Earnings of some oil companies have been running as much as double 1935 earnings. For some time it has been believed in financial circles that extra disbursements would be forthcoming, although their amount can not be determined easily because of the allowance made in the Revenue Act of 1936 for development costs and depletion.

Phillips Petroleum Co. declared an "unclassified" dividend of $1 payable Dec. 1 to record of Nov. 16. In previous quarters the company paid 25 cents plus 25 cents in extras. Phillips' earnings in the first nine months were $12,834,905, after all charges, an increase of over 30 per cent from the net of $9,850,428, after all charges, reported for the first nine months of 1935. Net per share for the first nine months this year was $3.08.

Standard Oil Co. (Indiana) declared an extra of $1 in addition to its 25-cent quarterly dividend. Edward G. Seubert, president, said the extra payment was based on an estimate of consolidated earnings for the year and recognized the provisions of the Revenue Act of 1936 as it affects the normal income tax and surtax on undistributed earnings.

Standard Oil Co (New Jersey) will pay stockholders an extra of 75 cents in addition to the regular semi-annual 50 cent dividend. Payment will be made Dec. 15.

Socony-Vacuum Oil Corp. declared a special dividend of 25 cents entirely to avoid taxes on undistributed profits. John A. Brown, president, said that the declaration "is made in order to reduce the company's liability for the new federal tax on undistributed earnings, because of the company's needs for capital expenditures and debt payments, the directors would prefer to retain in the business the cash represented by this special dividend."

Ohio Oil Co. will pay 35 cents a share to its stockholders, an increase of 10 cents from the amount paid last June 15.

Directors of Texas, Barnsdall, Plymouth, Shell and others are expected to declare dividends which will be payable this year.

Atlantic Refining Co. directors authorized a special payment of 25 cents per share in addition to the regular quarterly of 25 cents. This makes total dividends paid by Atlantic this year $1.25 compared with $1 in 1935.

* * *

Continental Oil

Increasing its earnings by almost 50 per cent over the same period a year ago, Continental Oil Co. report for the quarter ended Sept. 30 shows net profit of $3,727,357, after all charges but subject to year-end adjustments, equal to 79 cents a share on 4,682,625 shares (par $5) of capital stock excluding 55,968 shares held in treasury. This compares with net profit of $2,435,106 or 52 cents a share in the September quarter of 1935.

The net for the quarter just ended includes profit of $697,754 from the sale of properties. No provision is made for federal surtax on undistributed profits.

The company's profits for the first nine months, 1936, were about 45 per cent higher than in the same period in 1935. Net profits for the nine months ended Sept. 30 were $8,083,624, after all charges, equal to $1.72 a share. This compares with net profit of $5,568,802 or $1.19 a share in the first nine months of 1935.

* * *

Amerada Corp.

Amerada Corp.'s net income for the third quarter of 1936 was $475,336, after all charges including geophysical and geological expenses, equivalent to 60 cents a share on 788,675 shares of no-par common stock. This compares with net of $440,880 or 56 cents a share in the same period of 1935.

For the first nine months of 1936, ne income as compiled from the company's quarterly reports, was $1,405,632, after all charges, equal to $1.78 a share. This compares with net income of $1,259,214 or $1.60 a share in the first nine months of 1936.

* * *

Colonial Beacon

Colonial Beacon Oil Co. (Standard Oil of New Jersey subsidiary) reports net loss of $1,978,703, after all charges, for the nine months ended Sept. 30. This compares with net loss of $2,645,290 in the first nine months of 1935.

Standard of New Jersey now owns 99.48 per cent of the common stock of Colonial Beacon. Under the Jer-

sey company's recent offer to exchange one share of its stock for 2¼ shares of Colonial Beacon, almost all of the stock not then owned by Standard has been turned in. The exchange offer expired Oct. 15.

* * *

Pure Oil

Pure Oil Co. earned $7,591,526, after all charges, in the 12 months ended July 31, 1936, according to a report just issued by the company in compliance with the Securities Act of 1933 which requires a statement covering the 12 months following sale of securities by a company. Thus no comparative earnings are available for the period.

This net is equal to $1.73 a share on the 3,038,370 common shares after dividend requirements on the preferred. Net earnings in all of 1935 were $8,150,027 or $2 per share.

* * *

Quaker State

Quaker State Oil Refining Corp. reports for the nine months ended Sept. 30 last net income of $857,218, after all charges, equal to 92 cents a share. Comparable figures for the same period of 1935 are not available. In the full year of 1935 the company earned $914,567 or 98 cents a share.

* * *

Panhandle

A net profit of $24,351, after all charges, was reported by Panhandle Producing & Refining Co. for the quarter ended Sept. 30. This compares with net income of $3462, after all charges, in the same quarter a year ago.

Net profit for the first nine months of 1936 was $105,131 compared with net loss of $9856 in the first nine months a year ago.

Tax Bill on Gas, Oil

$870,000,000 in '36

NEW YORK—It is estimated that state gasoline sales taxes, which cost motorists $619,677,466, or an average of better than $30 per motor vehicle in 1935, will net the states close to $660,000,000 in 1936.

The federal government's income from its duplicating levy on motor fuel, costing the consumers $172,262,481 in 1935, may cost them more than $180,000,000 in 1936.

The federal tax on lubricating oil, which cost industries and motorists $28,818,918 in 1935, may top $30,000,000 in 1936. The total cost of these three levies is estimated at around $870,000,000.

Even an approximation of that revenue by federal and state governments will assure them of continuing to obtain the largest profit from the manufacture and sale of petroleum motor fuels and lubricants.

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CALL FOR BIDS to purchase royalty oil accruing to the United States from the Salt Creek, Wyoming, oil field. Sealed proposals, in duplicate, will be received in the office of the Secretary of the Interior, Washington, D. C., on or before noon, December 1, 1936, from responsible bidders for the purchase, beginning January 1, 1937, of royalty oil accruing to the United States from Government lands in the Salt Creek, Wyoming, oil field. Detailed specifications on quantities offered for sale, required form of bids, deliveries, volume measurements, gravity determinations, bond requirements, and action on bids, should be obtained by prospective bidders from the Director, U. S. Geological Survey, Department of the Interior, Washington, D. C., the Supervisor, U. S. Geological Survey, Casper, Wyoming, or the Register, U. S. Land Office, Cheyenne, Wyoming. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., pursuant to the specifications, the envelope to be marked plainly "Bid on Salt Creek Royalty Oil." No bid received after the time fixed herein for submitting bids will be considered.—Secretary of the Interior.

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